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Prince Edward Island
Department of the Environment

1989 ANNUAL REPORT

Gilbert R. Clements
Minister

Kenneth F. DesRoches
Deputy Minister

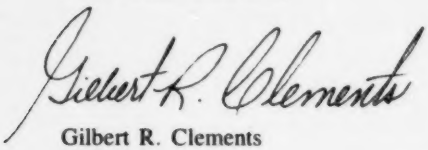
CONTAINS RECYCLED PAPER

The Honourable Lloyd G. MacPhail
Lieutenant Governor
Province of Prince Edward Island

May It Please Your Honour:

I have the honour to submit herewith the Annual Report of the Department of the Environment for the period January 1 to December 31, 1989.

Your obedient servant,



Gilbert R. Clements
Minister

The Honourable Gilbert R. Clements
Minister
Department of the Environment
Province of Prince Edward Island

Sir:

It is my pleasure and honour to submit to you the Annual Report of the Department of the Environment for the year ended December 31, 1989.

The Department was created in June of 1989 as a logical and timely extension of Government's commitment to protect and enhance the Island environment. The new Department encompasses all of the activities of the former Environmental Management Division of the Department of Community and Cultural Affairs as well as some programs from other divisions of that Department.

Organized into five branches, departmental activity is focused on the importance of our natural environment which is understood to encompass air, water, plant, animal, and human life. All branches contribute to the goal of ensuring that development in the Province occurs in a way which is consistent with the maintenance of a healthy environment for the benefit of present and future generations. The report contains detailed information on the activities of each branch.

Those activities bring us into constant contact with other departments, governments, and with citizens in all areas of the Province. These relationships are integral to our effort because they recognize that caring for our environment is a shared responsibility. We feel privileged by the opportunity to provide leadership and to play our appropriate role.

Perhaps our most enduring contribution can be in the area of increasing the level of environmental awareness - it is our hope that this report itself will contribute to that objective.

All of the Department appreciates your continuing support and interest.

Respectfully submitted,

Kenneth F. DesRoches

Kenneth F. DesRoches
Deputy Minister

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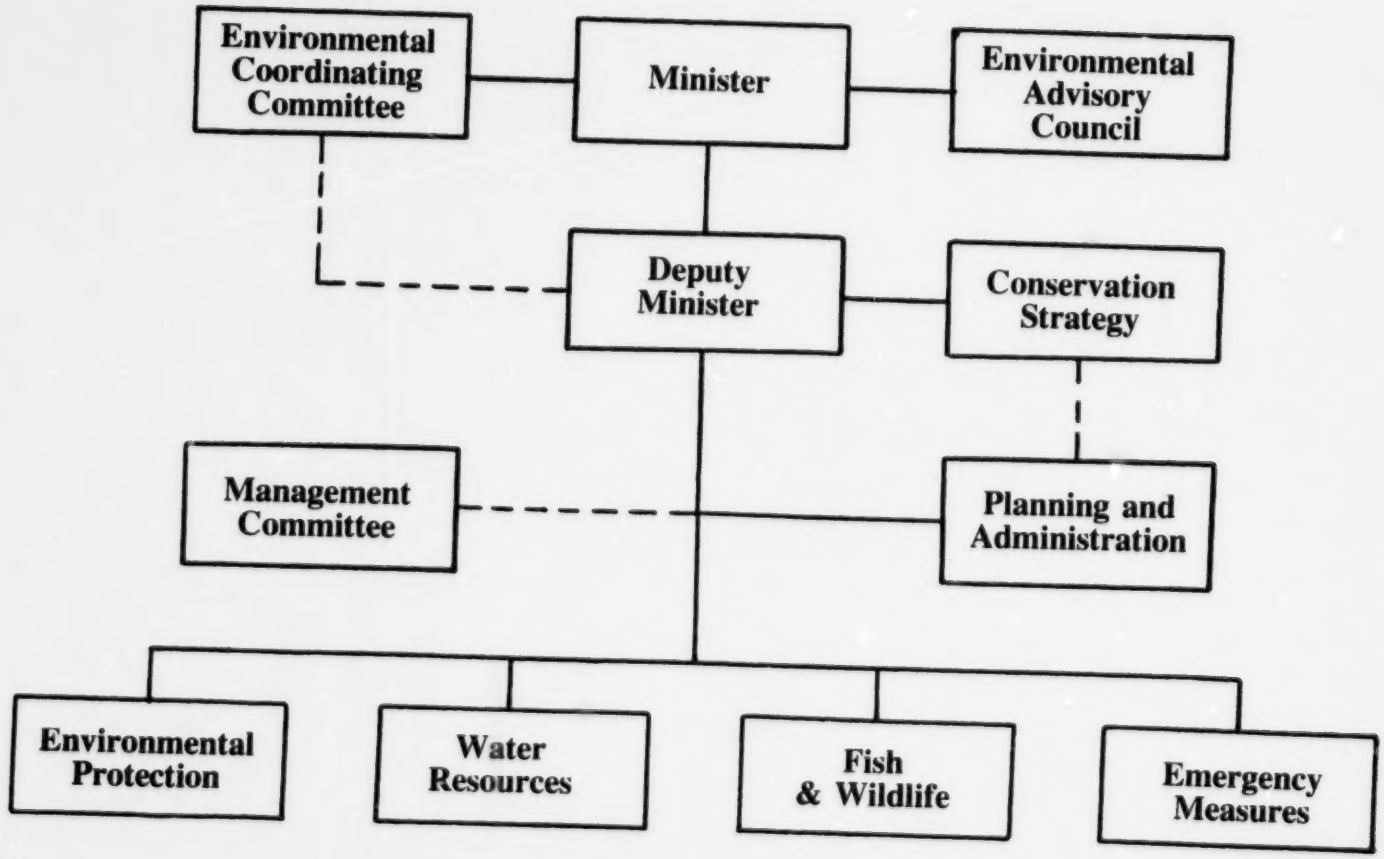
CONTAINS RECYCLED

P.E.I.
DEPARTMENT OF THE ENVIRONMENT



PLANNING AND ADMINISTRATION BRANCH

The Planning and Administration Branch is responsible for coordinating the Department's strategic planning and for its financial management. Key duties include the administration of programs under the P.E.I. Conservation Strategy, secretarial support for various advisory groups and the provision of public information about departmental activities. An important function of the Branch is to co-ordinate the environmental impact assessment process. The following are program and activity highlights of the Branch in the past year.

Department Of The Environment
Approved Budget
(for the fiscal year 1989 / 90)

EXPENDITURES

General Administration		342,900
Waste Management & Utilities Branch		
Administration	276,700	
Provincial Solid Waste	1,472,800	
Community Dumps	329,500	
Utility Operations	1,494,500	
Derelict Cars/Dilapidated Bldgs	114,000	
		3,687,500
Water Resources Branch		
Administration	337,000	
Marine Environment	112,900	
Underground Tank Program	91,500	
Water Agreement	166,600	
Community Services Lab	212,900	
		920,900
Fish and Wildlife Branch		
Administration	570,500	
Wetland Management	58,800	
Fisheries	76,600	
Cooperative Watershed Management	170,700	
Upland Game, Waterfowl & Furbearers	28,300	
		904,900
Conservation & Planning Branch*		358,300
Emergency Measures Organization Branch		
Administration	58,800	
Joint Emergency Projects	853,800	
		912,600
		7,127,100

REVENUES

Waste Management & Utilities		
Utilities	80,000	
Junkyard Licenses	1,000	
Derelict Cars	32,000	
		113,000
Water Resources		
Water Certificates	50,000	
Well Drivers Licenses	700	
Sandmining	1,500	
Miscellaneous	2,000	
		54,200
Fish & Wildlife		
Fish & Game Licenses	162,000	
Miscellaneous	3,000	
Wetland Management	58,500	
Cooperative Watershed Mtg.	170,000	
		393,500
Emergency Measures		749,200
Total		1,309,900

***(Planning and Administration were combined during the year.)**

Round Table On Environment and Economy

In January, Premier Ghiz established the P.E.I. Round Table on Environment and Economy. The Round Table is chaired by Hon. Gilbert R. Clements, Minister of the Environment and includes representatives from the primary sectors, environmental organizations, native people, the financial and business community as well as local government and the academic community.

The idea behind the Round Table is to bring together a cross-section of interests to discuss the relationship between environment and economy and to advise government on how their objectives can be integrated.

With secretariat support provided by the Branch, the Round Table met on four occasions during the past year. During its November meeting the members established an agenda for the upcoming year which sets, as its first priority, a report on sustainable development. The purpose of this report will be to identify on a sector by sector basis what the concept means to P.E.I. and how it can be advanced. It is anticipated that this report will be completed by February.

Environmental Advisory Council

The role of the Environmental Advisory Council is set out in section 4 of the **Environmental Protection Act.** The essential purpose of the Council is to serve as an advisory board to the Minister. The Planning and Administration Branch provides secretariat support to the 12 member council. The Council typically meets on a monthly basis to consider and advise on a broad range of environmental issues. More detailed information regarding the Council's activities for the past year is contained in its Annual Report.

Environmental Coordinating Committee

The Branch also provides secretariat support to the Environmental Coordinating Committee. The mandate for this interdepartmental Committee of Deputy Ministers is described in section 5 of the **Environmental Protection Act.** A primary objective is to ensure communication and coordinated planning between provincial government departments in respect of environmental issues. The Committee is chaired by the Deputy Minister of the Environment. Since it was established in April by the Lieutenant Governor in Council, the Committee has generally met on a bi-monthly basis to discuss and exchange information on a variety of Provincial environmental issues.

"Our Island Environment"

In August, Hon. Gilbert R. Clements announced plans to host a major public conference on the environment in February of next year. The purpose of this conference will be to solicit views from a cross section of Islanders on provincial environment policy for the 90's. Planning for this initiative is currently proceeding under the direction of a steering committee with representation from the Environmental Advisory Council, the Round Table on Environment and Economy and the Department.

Preliminary plans for the conference include the presentation of twelve workshops intended to address a number of important environmental issues. In preparation for the conference information kits were distributed in early December which included background material on all of the topics that will be discussed. To date, a great deal of public interest has been expressed about this conference. "Our Island Environment" promises to be an important event in setting P.E.I.'s environmental objectives for the decade ahead.

Environmental Impact Assessment

In an effort to make the Environmental Impact Assessment process an effective planning tool for predicting the potential environmental consequences of developments, and ensuring appropriate mitigative measures interim guidelines were established in October detailing the steps and procedures to register and evaluate proposals.

While the legislative authority requiring Environmental Impact Assessment is provided for in section 9 of the **Environmental Protection Act,** government established the interim guidelines in the form of a policy to ensure compliance with the Act.

In addition to establishing steps and procedures, the interim guidelines provide a list of development classifications considered to be undertakings requiring written approval by the Minister before they can proceed.

Consultations were held with numerous interest groups and government agencies during the year to review the interim guidelines and to solicit input in developing the final policy.

Numerous inquiries from developers were received and addressed. During the three month period that the guidelines were in place, nine written proposals were filed with the Department. Final decisions were reached in six of the nine proposals while two are still in the screening stage and will require additional information before a final recommendation can be made.

P.E.I. Conservation Strategy

The primary goal of the Conservation Strategy is to ensure that the concept of sustainable development is an integral part of all activities taking place in P.E.I., whether initiated through government, non-government organizations or the private sector.

The Strategy states that all government departments have a responsibility to ensure that the concept of sustainability is incorporated into their activities. The Deputy Minister of the Department coordinates government activities, in support of the Strategy, through the Environmental Coordinating Committee.

Conservation Strategy activities for the past year are summarized as follows:

1. Agricultural Video

The Strategy supported in cooperation with Agriculture Canada, the development of a video on soil erosion, its down stream effects, research currently being conducted and techniques to reduce the problem. This video will be a useful tool for making people more aware of the province's soil erosion problem.

2. Conservation Strategy Brochure

A brochure to inform the public about the need for conservation and how P.E.I.'s citizens can become involved, was developed and widely distributed. This was augmented by approximately 20 presentations about the Conservation Strategy to community schools and local organizations.

3. Discussions with Highway's Staff

In conjunction with the Environmental Advisory Council, several meetings were held with the Highway Branch of the Department of Transportation & Public Works to discuss the implementation of stronger environmental protection guidelines during construction and maintenance activities.

4. Semi-Natural Salmon Rearing Facility

Funding and technical support was provided to develop a semi-natural salmon rearing pond on the Morell River. This was a major project with additional financial and technical support from Fisheries and Oceans, Canada Employment and Immigration, P.E.I. Transportation & Public Works, the Fish and Wildlife Branch and Ducks Unlimited.

5. Environmental Education Study

The second year of a two year study of environmental education in P.E.I. was funded. A final report is expected early in the new year.

6. Scenic Heritage Roads

Six roads were designated as scenic heritage roads under the provisions of the **Planning Act.**

7. Natural Areas Protection Act

This past year, one private property was designated under the Act. Conservation Strategy staff coordinated discussions towards the development of guidelines and criteria for properties to be designated under the Act.

8. Island Conservation Assistance Program

A key recommendation of the Conservation Strategy was the establishment of a fund for environmentally based community projects. During 1989 nineteen community projects, employing 51 students, were supported. A summary of projects follows:

ORGANIZATION	NO. OF EMPLOYEES	LOCATION	PURPOSE
Ducks Unlimited	2	Kings County	Inventory & Management of local marshes
Southern Kings Branch P.E.I. Wildlife Federation	3	Montague River	Watershed Management
Souris and Area Branch P.E.I. Wildlife Federation	3	Big Brook/Grove Pines	Stream Enhancement
P.E.I. Fishermans Association	1	Province-wide	Development of a guideline for stream enhancement
Central Queens Branch P.E.I. Wildlife Federation	3	Wheatley River	Stream Enhancement
South Freetown Community Development Committee	1	Dunk River	Experimental introduction of insecticide to reduce black fly numbers
Community of Hillsborough Park	1	Charlottetown	Development of environmental trails
P.E.I. Trappers Association	3	Kings County	Removal of beaver dams
West Prince Chamber of Commerce	1	Mill River	Stream enhancement
West Prince Bird Conservatory	2	Portage	Upgrading interpretive facilities and programs
O'Leary Branch P.E.I. Wildlife Federation	4	Trout River	Stream enhancement
Charlottetown Area Development Corporation	1	Charlottetown	Municipal Tree Survey
Kinkora Area Business Commission	2	Dunk River	Development of Educational / Recreational Trails
Wildlife Habitat Canada	9	Montague River	Watershed Management
P.E.I. Soil and Crop Ass'n	1	Province-wide	Survey of L.D.C. lands
P.E.I. Federation of Fly Fishers	6	West River	Stream enhancement
Morell River Management Co-op	3	Morell River	Survey of river use and stream enhancement
East Prince Branch P.E.I. Wildlife Federation	3	Dunk River	Stream enhancement
Belle River Environmental Protection Association	2	Belle River	Stream enhancement

ENVIRONMENTAL PROTECTION BRANCH

The Environmental Protection Branch administers a wide range of programs and legislation designed to reduce various forms of pollution in the province including:

- air quality
- wastewater discharges
- hazardous wastes
- solid waste management
- excavation pits
- litter control
- dilapidated buildings
- unsightly premises
- derelict vehicles
- asphalt plants

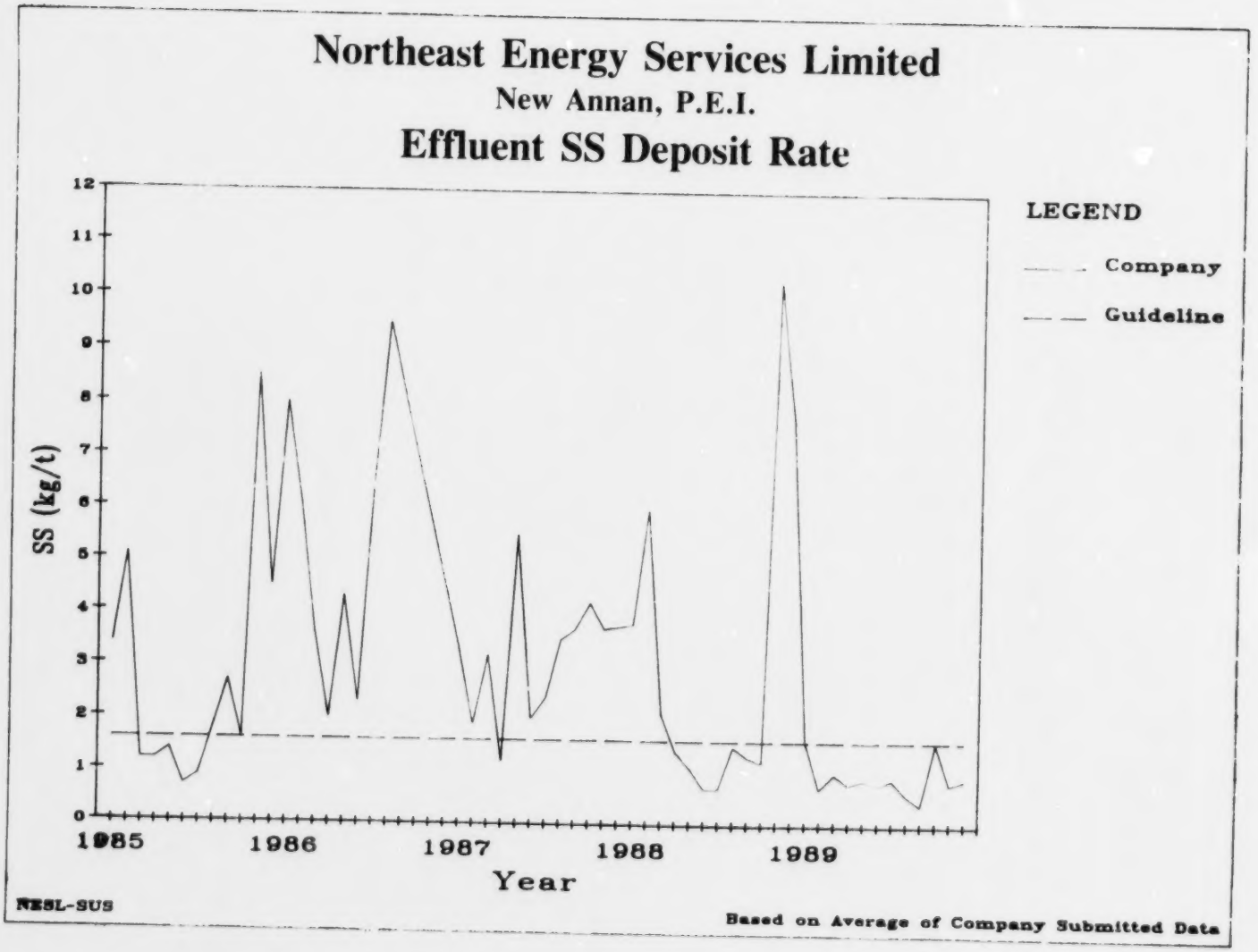
A highlight of the year was the improved results in waste treatment at the Northeast Energy Services Ltd. plant at New Annan. The plant is responsible for treatment of all wastewater discharges from the Cavendish Farms potato processing plant.

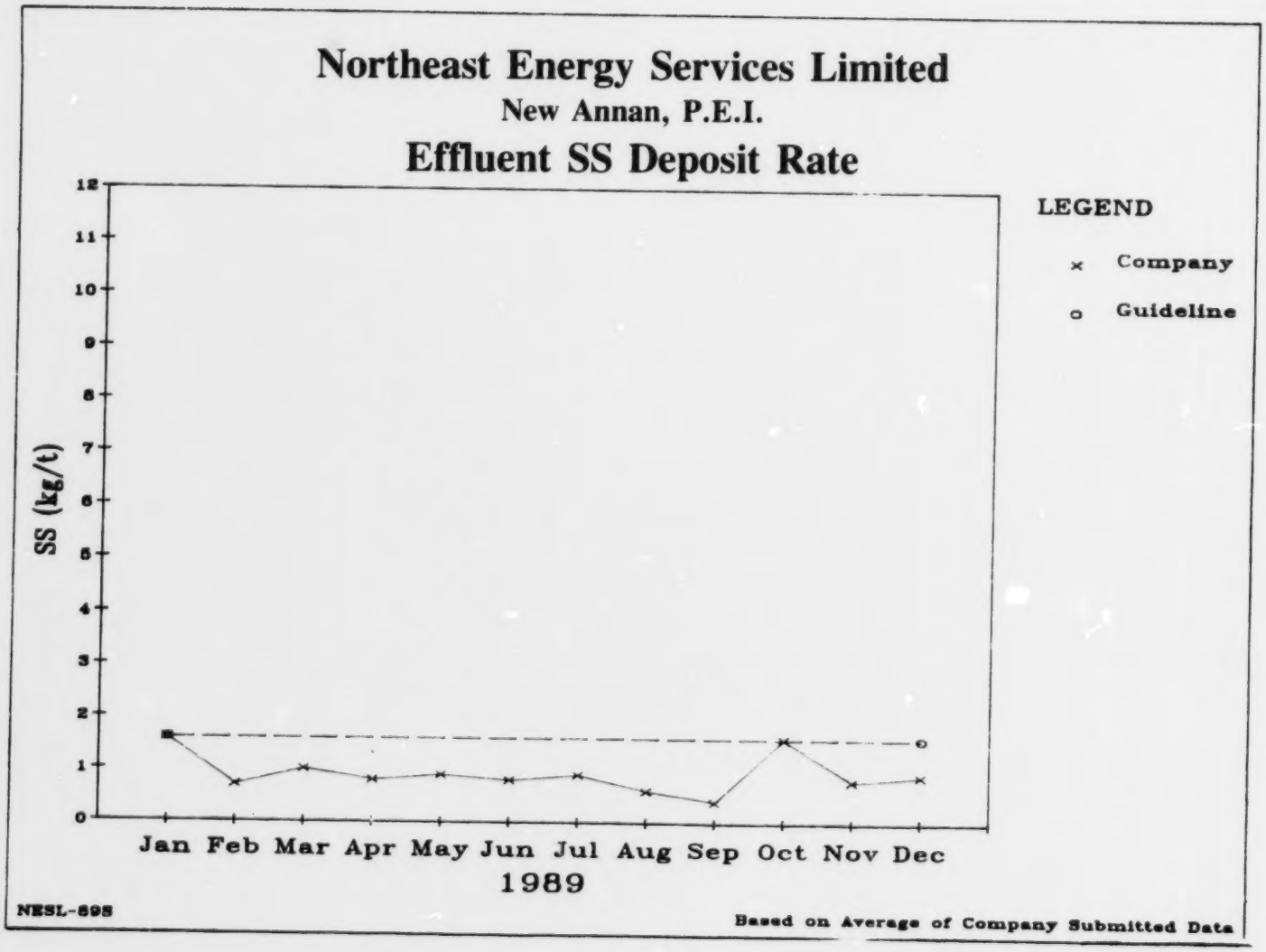
As can be seen from the charts 1 - 4 the plant was well within federal requirements for suspended soils and BOD for all twelve months of 1989, the first time since the treatment plant was expanded in 1986.

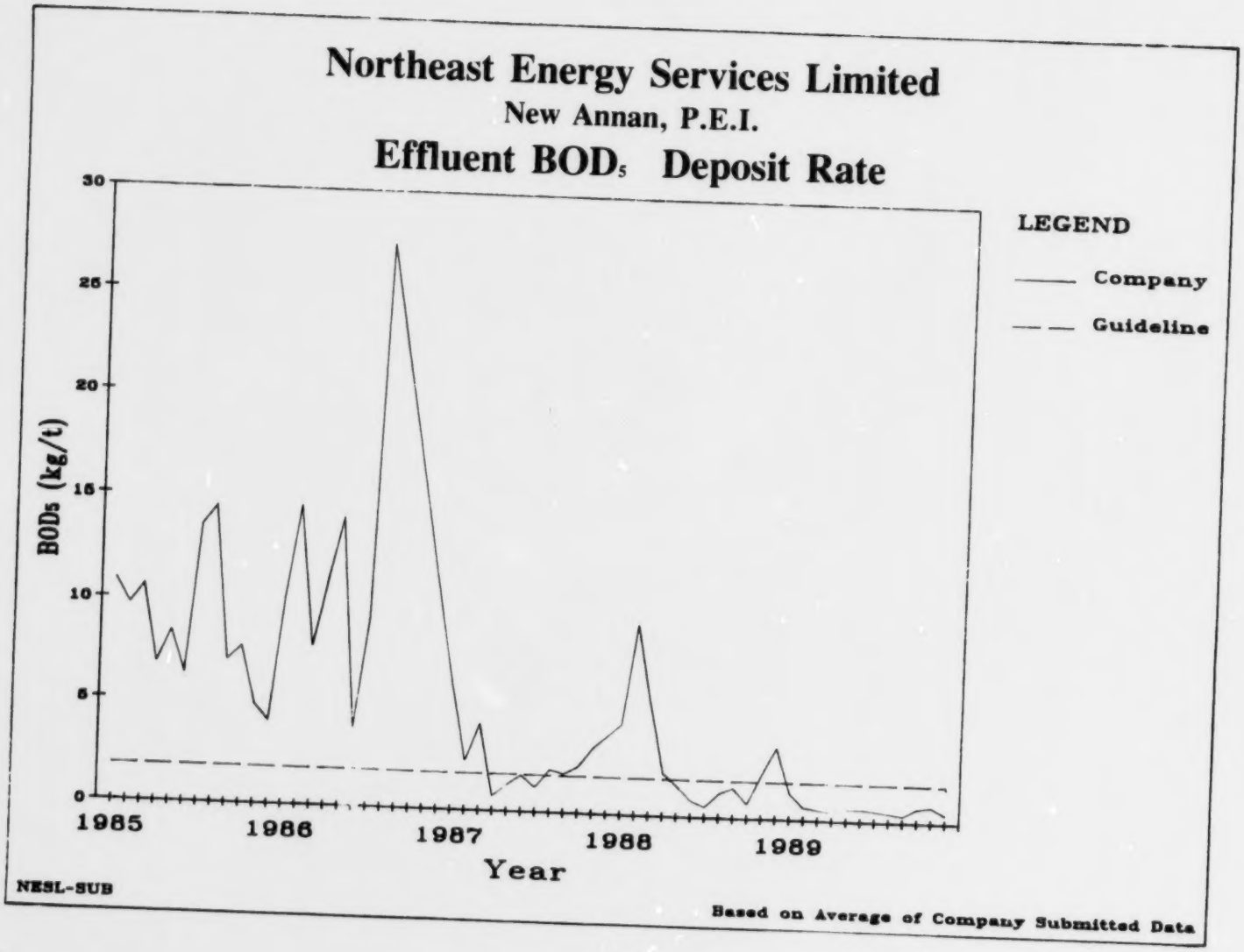
During the year the Honourable Gilbert R. Clements announced improvements to the treatment plant would be undertaken in 1990. In addition, Cavendish Farms decommissioned the first two of eight old treatment ponds on its property that have been the cause of much of the odor problem in the area. The Company also installed new equipment to prevent grease releases to the treatment system.

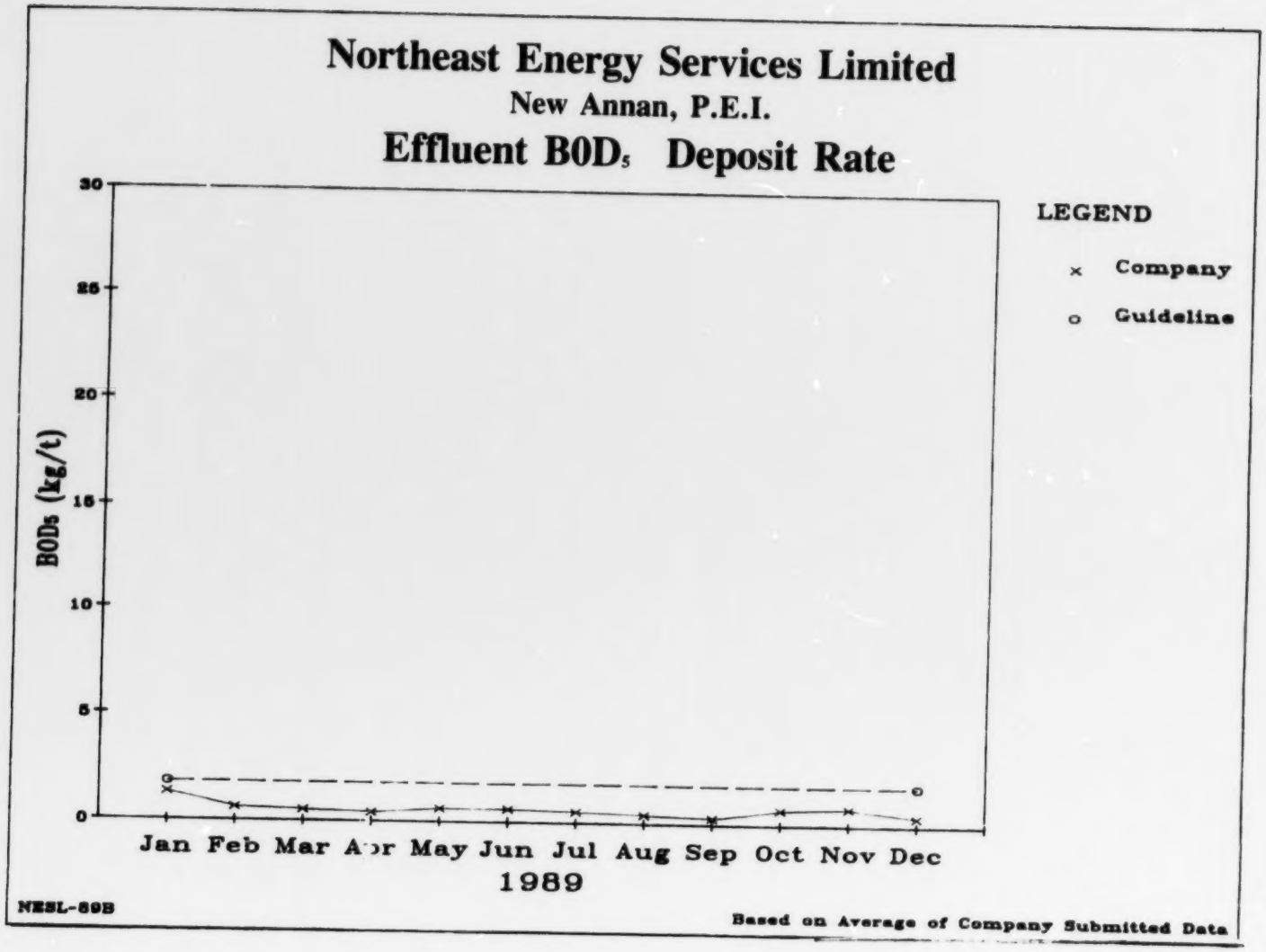
New Litter Control Regulations were enacted to replace the Beverage Container Regulations. When the new regulations come into force on March 1, 1990, fast food operations will be required to place litter receptacles at points of exist from the grounds and to empty them frequently so that litter does not overflow from the premises. In addition, wine coolers available from the L.C.C. will have to be sold in refillable containers.

The new branch assumed responsibility for the Excavation Pit Program and the Derelict Vehicles and Unsightly Premises Section.


Northeast Energy Services Limited
New Annan, P.E.I.
Effluent SS Deposit Rate
SS (kg/t)
0
1
2
3
4
5
6
7
8
9
10
11
12
1985
1986
1987
1988
1989
Year
LEGEND
Company
Guideline
NESL-SUS
Based on Average of Company Submitted Data


Northeast Energy Services Limited
New Annan, P.E.I.
Effluent SS Deposit Rate
LEGEND
Company
Guideline
SS (kg/t)
0
1
2
3
4
5
6
7
8
9
10
11
12
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1989
NESL-695
Based on Average of Company Submitted Data


Northeast Energy Services Limited
New Annan, P.E.I.
Effluent BOD5 Deposit Rate
BOD5 (kg/t)
30
25
20
15
10
5
0
1985
1986
1987
1988
1989
Year
LEGEND
Company
Guideline
NESL-SUB
Based on Average of Company Submitted Data


Northeast Energy Services Limited
New Annan, P.E.I.
Effluent BOD5 Deposit Rate
BOD5 (kg/t)
30
25
20
15
10
5
0
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1989
LEGEND
Company
Guideline
NESL-89B
Based on Average of Company Submitted Data

Excavation Pit Program

There are at present 208 excavation pits operating under permit, an increase of 18 over the 190 pits reported in 1988. The bulk of production is used for road construction and maintenance, with lesser amounts used for concrete aggregate and other uses.

The regulations previously proclaimed under the Planning Act have been re-proclaimed under the Environmental Protection Act, with minor changes of an editorial nature, to overcome a potential enforcement difficulty arising from a change in the Planning Act. A more comprehensive overhaul and upgrading of these regulations was begun in 1989 and is now in the development stage. Proclamation is anticipated in the new year after a process of consultation with interested groups and the public.

Intergovernmental Cooperation

Staff of the branch participated on several regional and national committees and task groups during the year. The Director is a member of the Toxic Substances Advisory Committee under the Canadian Council of Ministers of the Environment, a federal-provincial advisory committee established under the Canadian Environmental Protection Act and a regional group to oversee siting of a portable facility to destruct P.C.B.'s.

Derelict Vehicles and Unsightly Premises Program

Approximately 2,300 vehicles were hauled to the 17 storage sites by 3 provincial contractors during 1989, resulting in 2,344.85 tons of crushed vehicles being removed from provincial sites. An additional 3,777.87 tons were removed from private yards. As a result 6,122.72 tons of scrap metal were shipped to a plant near Moncton, New Brunswick for shredding and shipment to steel mills.

During the year 7 buildings were demolished and another 80 buildings were burned under the Unsightly Property Act. Four Orders were issued during the year with two cases outstanding at year end.

Solid Waste Section

The Solid Waste Section is directly responsible for the operation of three regional sanitary landfill sites in St. Eleanors, Sleepy Hollow and Cardigan, and six rural refuse container sites in Queens County. Another thirty-five (35) community refuse disposal sites are located across the Island serving areas of the province not served by the landfills or the Energy from Waste Plant in Parkdale.

Thirty-one (31) of the sites are managed by Community Councils or by Community Disposal Site Committees with funding and technical assistance being provided by the department.

Two of these sites, Souris and Tignish have unique agreements between the department, the community and private contractors to provide management services at the local disposal site.

Two sites, Beach Point and St. Georges, were closed in 1989 after full consulation with the committees involved. The Community Management Committee for the Murray River area felt that one site in their district was sufficient and they could use their resources more economically by eliminating the site at Beach Point. In the case of the St. Georges area, the site is so close to a regional sanitary landfill it was more practical to close the site. A third disposal site was closed at St. Peters and replaced by a Container Operation when local citizens assumed responsibility for operation of the site.

Staff continues to provide necessary management at the other four (4) sites although preliminary work continues to convert these to the community management system.

Approximately forty (40) complaints involving the use of private dumps for household garbage, manure storage, fish offal and similar environmental problems involving municipal solid waste were investigated, with most being resolved in a constructive manner. A total of 249 permits were issued to individuals under the disposal permit system for special waste treatment and/or disposal at the three regional landfills.

The section represents the department on the operating committee for the Energy from Waste Plant (EFW) located on Riverside Drive in Parkdale. The department currently pays a tippage fee of $26 per tonne of garbage treated at the Energy from Waste Plant. The steam generated is sent to the Queen Elizabeth Hospital, Hillsborough Hospital and the Sherwood Home and displaces approximately 20,000 bbls of oil per year.

The Energy from Waste Plant serves a population of approximately 45,000 people in the greater Charlottetown area and treated some 32,000 tonnes of municipal solid waste (MSW) this year. This volume of MSW means that for almost eight (8) months of the year the Energy from Waste Plant is at or near its capacity of 99 tonnes per day.

On a broader scale the staff has been involved with the Energy Corporation in examining the existing waste management system on Prince Edward Island and how this system can be improved to better handle the municipal solid waste generated in the province while obtaining the maximum amount of recoverable energy through the disposal process. It is a long term goal to be able to remove the non-burnable material to better utilize the plant and appropriately treat the wastes.

In order to keep abreast of new developments, both in technology and regulatory considerations, the section represents the province on the National Waste Management Committee established by the Canadian Council of Ministers of the Environment (CCME). The section is also represented on the National Packaging Task Force whose primary goal is to reduce packaging waste and contribute to a 50% overall reduction of waste by the year 2000.

The section is committed to keeping pace with the changing technology and meeting the increased public demands to provide efficient and environmentally sound disposal methods for P.E.I.'s Municipal Solid Waste.

Waste Management & Utilities Section

This section provides technical assistance to municipalities, industries, commercial establishments and other agencies with respect to the development, operation and maintenance of water supplies and waste treatment facilities.

Technical assistance was also provided to Building & Development Services of Community & Cultural Affairs for on-site water and sewage disposal systems for individual lots and subdivision approval. In 1989 approximately 190 sites were inspected for approval of on-site servicing or for existing problems and advice on repairs.

The section is responsible for the operation and maintenance of provincially owned water supplies and waste treatment facilities. These include industrial water systems at Montague, Souris, Georgetown, North Rustico, Egmont Bay, Alberton South, and Beach Point. The Georgetown and North Rustico systems also serve a large number of domestic customers. The latest figures have 143 domestic customers in Georgetown and 98 domestic customers in North Rustico. The Cross Roads system installed in 1988 now services 39 homes in the area.

Staff responded to a number of requests for technical assistance concerning problems with domestic sewage disposal systems resulting in recommendations being made for repairs to upgrade or replace the system. Improper installation and poor maintenance continue to be the main factors in the malfunction of these systems.

In 1989 twenty-four septic tank pump truck operators were issued permits for septic tank pumping and sewage sludge disposal. Staff inspected sewage disposal areas and investigated complaints of improper waste disposal.

A weekly sampling program was continued in 1989 to monitor the performance of six municipal and two industrial waste water treatment plants. Package treatment plants servicing tourist facilities, schools, and mobile parks were also monitored. Periodic inspections of 14 municipal lagoons as well as a seasonal sampling program of the lagoons was carried out during the year.

A number of plans for extension to existing water and/or waste treatment systems were submitted to the department for review and approval under the Environmental Protection Act. A total of 34 permits were issued for construction or expansion of sewer and water systems in the province. Under the Environmental Servicing Assistance Program (ESAP) $700,000 of financial assistance was made available to a number of communities for installation of sewer and/or water systems. These include East Royalty, Bunbury-Southport, Victoria, Souris, Sherwood, Kensington, North River, Cornwall and West Royalty.

Air Quality & Hazardous Waste Section

Late in 1988, the new position of Supervisor, Air Quality and Hazardous Waste was staffed. In 1989, significant progress was made on issues related to air quality and hazardous waste.

Air Quality

Several air quality issues were addressed by this section in 1989. During the year, Maritime Electric installed magnesium hydroxide injection equipment to control acid smut emissions from the thermal power plant in Charlottetown. This equipment should be fully operational during 1990.

Air quality monitoring continued under two federal-provincial joint programs - the National Air Pollution Surveillance program (N.A.P.S.) and the Long Range Transport of Air Pollutants program (L.R.T.A.P., chiefly concerned with acid rain).

The Charlottetown N.A.P.S. Station monitors sulphur dioxide and particulate matter in the ambient air and provides this information to Environment Canada's national air quality monitoring program. Precipitation samples are collected to monitor the long term effect of acid rain. Efforts to establish a more representative precipitation sampling site continue.

Discussions with Maritime Electric lead to revised forecasts of sulphur dioxide emissions. The second annual report was submitted under the Canada-Prince Edward Island Sulphur Dioxide Reduction Agreement. Emissions of SO_2 have increased in recent years but P.E.I. is still below the 1994 limit of 5,000 tonnes of sulphur dioxide.

This section responded to a variety of general information requests on topics such as air pollution, acid rain, ozone layer, radon, air quality and the greenhouse effect.

A number of complaints were investigated arising from odour, noise, open burning, the Scott Mill in Abercrombie, N.S., and asphalt plants.

Discussions were initiated with the Public Utilities Commission to restrict the volatility of gasoline. This measure is intended to reduce emissions of volatile organic compounds which contribute to ground level ozone problems.

Meetings were also held with energy officials regarding CO_2 emissions and possible future strategies to meet international commitments regarding reductions.

In order to keep pace with new developments both in technology and regulatory considerations, this section represented the province and participated in committee activities: Federal Provincial Advisory Committee on Air Quality under the Canadian Council of Ministers of the Environment, Federal-Provincial NO_x-VOC Control Program, Work Group on Emissions Guidelines for Wood-fired Systems, Atlantic Region LRTAP Group, Working Group on Emissions Inventory. The province is represented by this section on several other committees without actively participating.

Hazardous Waste

In 1989, advice was provided to over 200 clients regarding waste disposal options. Inquiries ranged from the disposal of household products such as paint, pesticides or batteries, to lists of surplus chemicals from laboratories, and industrial wastes. A number of investigations of the waste disposal practices of businesses were conducted by this section in response to public complaints or inquiries.

A policy book was developed regarding the disposal procedure for a variety of products. This will facilitate our response to disposal inquiries in the future.

An emergency spill response plan was developed to formalize the response procedures of the Department.

On several occasions, this section facilitated the exchange of chemicals between people that wanted to dispose of them, and people interested in using the material. It is time consuming to arrange an exchange but the dollar savings of disposal costs can be significant. This approach is also consistent with the department's commitment to the 4 "R"s of waste management - reduce, reuse, recover, recycle.

The P.E.I. Department of Agriculture, in cooperation with Environment Canada, conducted a survey of farmers to develop an inventory of unwanted agricultural chemicals. Although the response to the survey was low, it indicated that there is a significant quantity of pesticides stored on Island farms. This section developed a report of pesticide management and disposal options and recommended a follow-up strategy.

Specific chemicals become unstable over time, and the only method of disposal is by detonation. This section coordinated the disposal of unstable chemicals by the RCMP Explosives Disposal Unit. Potentially explosive materials were collected from eight locations and detonated in a newly constructed cell of the Sleepy Hollow Landfill Site.

This section is responsible for the regular inspection of the PCB storage site in Georgetown, owned by the P.E.I. Development Agency. Federal sites are inspected by Environment Canada.

Efforts to establish a code of practice for biomedical waste management practices continue. All Island health care facilities are very conscious of the need for infection control and responsible waste management.

Under the Transportation of Dangerous Goods Act, this section is responsible for manifesting the transportation of hazardous waste. Copies of waste manifests describing shipments which originate in P.E.I. are received regularly. More manifests were received in 1989 than in all previous years. This is due to more responsible waste management by P.E.I. businesses and increased awareness of chemical disposal companies. Regular reports about hazardous waste movement are prepared for Environment Canada.

Public concern about hazardous chemicals is increasing, as was evidenced by the large number of general inquiries received regarding toxic materials, PCBs, pesticides, waste manifests and household hazardous wastes. A Women's Institute group and the Farm Safety Advisory Committee requested presentations on aspects of waste management. To encourage the development of regional waste management initiatives, this section participated in a meeting of the Atlantic Committee on Hazardous Waste.

Continuing education is essential to keep pace with rapidly changing technology. This section attended the Air and Waste Management Association (Atlantic Section) Technical Meeting, the Canadian Waste Management Conference, and a Pesticide Applicators Safety Course.

In more general activities, this section participated in the Canadian Council of Ministers of the Environment meeting in Charlottetown, and World Food Day planning. Participation in the federal government environmental assessment and review process workshop was useful since Environmental Impact Assessment activities are increasing.

WATER RESOURCES BRANCH

Introduction

Water Resources Branch is responsible for the management, protection and enhancement of the Provinces's groundwater, inland surface water and coastal water resources. The Branch also provides chemical and microbiological laboratory services to provincial government departments, municipalities and the public and manages programs related to shore zone sand mining.

Key areas requiring attention continue to be groundwater quality issues, groundwater protection and land use planning, environmental impact assessments, soil erosion and nutrient loss and its effect on streams and estuaries, and the need for well head protection in municipal water supplies.

Groundwater Protection Section

Water Well Program

A complete redraft of the Water Well Regulations was completed and sent out for public review. These include provisions for improved methods of sealing casing and tighter controls for high capacity wells.

Seven well drilling firms were active in the province. One new drilling license was granted. A meeting was held with well drillers to discuss improved methods of sealing casing.

Well drilling statistics for the province are summarized below:

Well Drilling Statistics	
Well Drilling Licenses Issued	13
Well Exploration Permits	24
Restricted areas	7
Field Inspection of Well Drillers	35
Well Driller Reports Received	550
Design or Supervision of Pumping Tests	34
Salt Water Wells Developed	5
Abandoned Wells Plugged	38
Abandoned Wells Inspected	17
Abandoned Wells Reported	21

Municipalities, consultants and private industries were given technical assistance and advice for water supply projects. These included projects at Tignish, North River, Cornwall, West Royalty, and other locations. The development of salt water wells for shellfish holding or aquaculture resulted in investigations at Springbrook, North Rustico and other locations.

A total of 24 Groundwater Exploration Permits were issued during 1989. In addition, assistance was provided to a number of well owners through well logging activities (gamma, conductivity, resistance), and assistance in conducting pump tests, and interpreting pump test and other hydrogeological data.

Subdivision Assessment Program

Applications for subdivisions and industrial developments were reviewed by the Water Resources Branch as requested by the Department of Community & Cultural Affairs and several municipalities. These include assessment of the availability of suitable quality and quantity of water for the proposed development. Potential impacts on water quality are also assessed. A total of 103 applications were reviewed during the year.

Groundwater Program, Canada - P.E.I. Water Management Agreement

Groundwater Resource Evaluation Project

The Groundwater Resource Evaluation Project is a program designed to investigate the groundwater resources of 12 communities on Prince Edward Island. These investigations include the manipulation and interpretation of existing data, and the collection and interpretation of new data relating to groundwater resources, principally through test drilling, pump testing and water quality analyses.

During 1989, a total of 7 test wells were constructed in the Communities of Miminegash, Bunbury, Southport, and Murray River. Pump testing, and analysis of pump test data was conducted on all of the wells mentioned above as well as on two wells in the Community of North River and three wells constructed the previous year in the Community of Cornwall. In addition to this test drilling and pump testing activity, geophysical logging of 8 of the above wells was conducted.

Existing pump test data from the Communities of Montague, Georgetown, Murray Harbour, Alberton and Tignish was reviewed and evaluated. Draft reports for work conducted on the groundwater resources of the Communities of Cavendish, O'Leary, Cornwall and the Bunbury-Southport area have been completed.

Water Well Construction Pilot Project

The Water Well Construction Pilot Project is aimed at promoting and evaluating improved water well construction practices. Work during 1989 consisted of two main components, the construction of six wells as part of a demonstration project on the site of the former East Royalty Landfill Site, and a continuation of the program initiated the previous year. The six wells drilled under the demonstration project are intended to form the basis for a controlled test of the effectiveness of various grouting techniques in sealing the annular space between well casing and the well bore.

Under the main component of the pilot project, approximately fifty more wells were constructed, and sampling of approximately two thirds of these wells has been conducted, to assist evaluation of the effectiveness of these improved well construction techniques. Initial results of this sampling suggest that wells constructed using these improved techniques have only about one third the probability of experiencing bacterial contamination as wells of more traditional construction.

Pesticide Sampling Project

Sampling continued during the year for the pesticides phorate, disulfaton, metribuzin, atrazine, and dinoseb. Results were also received for samples collected in 1987.

The results indicate detectable residues of all compounds in groundwater. The concentration of dinoseb in three wells was above the recommended guideline for drinking water. The number of wells with detectable concentrations of metribuzin and a high percentage of detectable residues of atrazine indicates that further sampling is required. Other than dinoseb, no concentrations were detected at levels above acceptable concentrations.

Ground Water Quality Programs

Activity in groundwater sampling programs increased over the past year. This was due to the result of major groundwater contamination investigations at North River, Cornwall, Tignish, Borden and Kensington. These major problems involved pesticides and sewage and bacterial contamination. Details on each are given at the end of this section.

Monitoring of public water supplies continued at provincial parks, schools, subdivisions, municipalities, senior citizens housing units and other public locations to ensure acceptable drinking water quality.

The Branch continues to provide water quality analyses and investigation of water quality problems upon request. This service has increased by 32.7% due to a strong public demand. A charge of $50.00 for Water Quality Certification for mortgage purposes was introduced in August. A summary of water samples collected by the Branch is given below.

Samples Collected

	1988	1989
Bacterial Analyses	5418	6234
Routine Chemistry Analyses	2372	3189
Water Quality Certificates (Mortgages)	1237	1274
Agriculture Research Station Chem. Analy.	1103	1397
Public & Private Wells	884	1237
Landfill Monitoring	119	160
Organic Chem. Analyses	—	584
Pesticides	—	516
Hydrocarbons	—	68
Dept. of Health Referrals	10	16

A breakdown of pesticide samples collected is given below:

Pesticide	Number Collected
Dinoseb (water)	226
Dinoseb (soil)	26
Phorate	72
Disulfoton	72
Metribuzin	68
Aldicarb	34
Atrazine	12
Simazine	2
MCPA	2
Diazinon	1
Chlorothalonil	1
TOTAL	516

The major groundwater quality problems continue to be coliform bacteria, nitrates, petroleum, chlorides, iron and manganese.

Details on some of the major problems investigated are:

Cornwall

A routine check of two wells led to the discovery of 29 wells with high total and faecal coliform counts. The major contamination zone was in the Hyde Street, Bonavista Drive area. The source of the problem is attributed to leakage from the municipal sewage system. A number of homes have installed ultraviolet sterilizers and the community has made repairs to the sewage system. The community is also considering installing a central water supply system to avoid a repetition of this problem.

North River

Further leakage from the community sewage holding lagoons resulted in the recontamination of 12 wells along Lakeview Drive, Trans Canada Highway and MacKinley Drive. This forced the community to install a central water system to supply water to the affected area.

An investigation in the MacKinley Subdivision resulted in sampling of all 75 homes in the subdivision. A total of 43 homes had total coliform counts and 25 of these also had faecal counts. The source of this problem is attributed to sewage contamination and poor well construction. The community has installed a central sewer system to service about half of the subdivision and several homeowners have installed ultraviolet sterilizers.

Tignish

An initial complaint of yellow, discolored water revealed a major contamination of groundwater by the pesticide dinoseb. A total of 9 wells were found to have dinoseb concentrations above the Guidance Value of 10 ppb established by Health & Welfare Canada. Another 12 wells had dinoseb concentrations between one and ten parts per billion.

Seven test wells and eight test pits were drilled to identify the source of the problems. A definite source has not been located, however it appears to be originating from a vacant lot.

The Community of Tignish is in the process of installing a central water system to service the contaminated area.

Borden

A hydrogeological investigation commissioned by Public Works Canada revealed that 12 out of 79 wells sampled had total coliform bacteria counts over the recommended levels established by Health & Welfare Canada. Wells with chlorides (4), manganese (6), and iron (3) concentrations above recommended limits were also identified.

A follow-up sampling of 59 wells by the Water Resources Branch showed that only 3 wells had excessive total coliform counts. The source of the contamination is attributed to poor well construction, sewer backup or seepage.

Kensington

Sampling conducted as part of the Canada-P.E.I. Water Management Agreement led to the discovery of two wells with excessive dinoseb concentrations. These are located near the west boundary of the town and are attributed to regular application on a nearby field.

Another occurrence of an excessive dinoseb concentration in one well was also confirmed within the town limits. The source in this case was a spill of dinoseb after a fire in a potato storage warehouse in 1984. This occurrence confirms that dinoseb is persistent in the sub-surface with concentrations remaining at a constant level for a period of 5 years.

Other Groundwater Quality Investigations

Westmoreland: One well contaminated from run-off from a manure storage pile. Improper ditching along road allowed run-off to enter adjacent property. Proper ditching along road has corrected situation.

Meadowbank: Two to four wells affected by salt water intrusion following West River causeway repairs. Recommended central water to supply cluster of summer cottages. Recommendation was followed and was successful.

Morell: One well contaminated from back up in sewer lateral. Problem cleared up after repairs to line.

Milton: One well contaminated with fuel oil from slow leaking private storage tank. New well drilled.

Sturgeon: Test well drilled to determine availability of good quality water. Homeowner has experienced road salt contamination from day well was drilled. Owner may consider water treatment.

Ft. Augustus: One well contaminated by effluent from owners septic system. Repairs have yet to be carried out.

Bridgetown: One well contaminated by effluent from owners rock pit. Problem cleared up after rock pit was abandoned.

Southport: One well contaminated by effluent from owners septic system. New well was drilled.

Johnstons River: One well contaminated with iron and manganese. Recommended well reconstruction with specifications. Well driller did not follow specifications and problem was not corrected. Well was reconstructed twice ignoring specifications. Water is now being treated.

Canoe Cove: One well servicing public park contaminated. Source unknown. Service to park was discontinued.

St. Georges: One well contaminated by effluent from owners rock pit. Rock pit abandoned and problems cleared up.

Murray River: One well contaminated by salt water intrustion. Well abandoned and new well drilled.

Fortune: One well contaminated with iron and manganese. Water treatment unit installed.

Montague: One well contaminated with petroleum resulting from a leaking underground storage tank. New well drilled.

Peters Road: Well servicing school contaminated with fuel oil from leaking underground storage tank.

Cardigan: One well contaminated with bacteria. Source unknown. Problem cleared up after disinfection.

Bayview: One well contaminated with bacteria. Source unknown. Recommended well recontruction since disinfection did not work.

Annandale: One well contaminated with fuel oil. Probable source is an old spill.

Hillsborough Park: Investigating a taste problem in the water system servicing a trailer park.

Murray River: One well contaminated with iron and manganese. Redrilling did not correct problem. Water treatment unit on system has improved but not eliminated problem.

Gaspe Rd., O'Leary: Two wells were contaminated from a sewage back-up in 1988. Problem has since cleared up.

Mason Rd., Bunbury: Four wells were contaminated with bacteria from manure runoff. Situation corrected itself after runoff was stopped.

Kelvin Grove: One well was contaminated with iron and manganese. Determined to be related to nearby dam construction. A new well was drilled.

Kinlock: Three wells were contaminated with faecal coliform bacteria. Two septic systems were dyed to try to identify the source. The investigation will continue in the spring.

Wilmot: Five wells were sampled in a survey of a previous nitrate problem. Two wells had nitrate levels over the acceptable limit.

West Cape: A referral from the Department of Health. One well was contaminated with surface water.

Elmsdale: One well was contaminated with bacteria. A new well was drilled.

St. Lawrence: Two wells were contaminated with bacteria and nitrates. One new well was drilled.

Underground Tank Program

This program completed its third year of operation. The main focus in 1989 was the removal of remaining unprotected tanks 15 years of age or older. Five hundred and fifty-five tanks were removed in 1989 bringing to 1069 the total number of tanks removed since the program began. Twenty percent of all tanks removed were leaking, and extensive cleanups were sometimes required.

In August, 8 offences under the Petroleum Storage Tanks Regulations were made ticketable offences under the Summary Proceeding Act Ticket Regulations. This brings the total number of ticketable offences to 12. A total of 14 tickets were issued for offenses as indicated in Table 1. Table 1 gives a summary of activities under this program.

Table 1

Underground Petroleum Tank Program

		1989
Underground Tanks Registered		2122
New Underground Tank Installations Inspected		79
Underground Tank Removals Inspected		555
Leaking Underground Tanks Removed		110
Inventory Record Inspections		198
Galvanic Monitoring Checks		70
Registered Tank Installers		145
Summary Offence Tickets Issued		14
Failure to Maintain Inventory Records	4	
Alteration by Unregistered Installer	4	
Delivery to Unregistered Tank	3	
Failure to Notify of Alteration	1	
Failure to Notify of a Spill	1	

A revision of the Petroleum Storage Tanks Regulations was completed and released for public comments. The revisions propose to include aboveground tanks in the regulations, provides for the use of concrete containment vaults, two classes of tank contractor licenses and other changes.

The province continues to be involved in the National Task Force on aboveground & underground storage tanks. The major effort in 1989 was the development of an aboveground tank code.

Staff responded to 243 spills during the year. The locations and sources of these spills are presented in Figures 1 and 2. Each spill requires at least one site visit and the larger spills are very time consuming. The Department released a brochure for owners of domestic fuel oil tanks which explains how to avoid the dangers associated with above ground heating oil tanks. A draft environmental spill response plan was prepared and is currently under review.

Some examples of major spills investigated in 1989 are given below:

Canoe Cove - A major clean-up involving the extensive removal of contaminated soil and bedrock.

Sherbrooke - A clean-up from a leaking underground tank involving the extensive removal of contaminated soil and bedrock. One Summerside town well had to be temporarily shut down. A bentonite seal was placed over the spill area and two monitoring wells were drilled.

West Royalty - A clean-up from a leaking underground tank involving the extensive removal of contaminated soil and bedrock. The main well for the West Royalty Industrial Park had to be temporarily shut down.

Bloomfield - A leaking gasoline storage tank system at a service station resulted in a major clean-up. Recovery of gasoline is continuing via the pumping of recovery wells.

Basin Head - A leak of approximately 500 gallons from a broken fuel return line resulted in a major clean-up. A bentonite seal was placed over the spill area.

Charlottetown - A leak from piping and from an 80,000 litre underground tank resulted in contaminated soil. A bentonite seal was placed over the spill area. A loss of over 45,000 litres of fuel oil was suspected.

Sherwood - A leak from an abandoned underground tank resulted in contamination of a well at a school. The tank was located after an exhaustive search.

Souris - An underground pipeline leak from a storage tank system was cleaned up and the excavation was sealed. A town well located 350 metres uphill was not affected.

West Point - A suspected pipeline leak resulted in an oil slick inside the Harbour causing concern to local shell fishermen. One monitoring well was drilled and some fuel oil was recovered.

New Annan - A gasoline leak from an underground tank system (piping) resulted in an extensive clean-up involving the removal of 510 m^3 of contaminated soil. A vapour extraction system was installed and the spill area sealed with a bentonite seal.

Figure 1

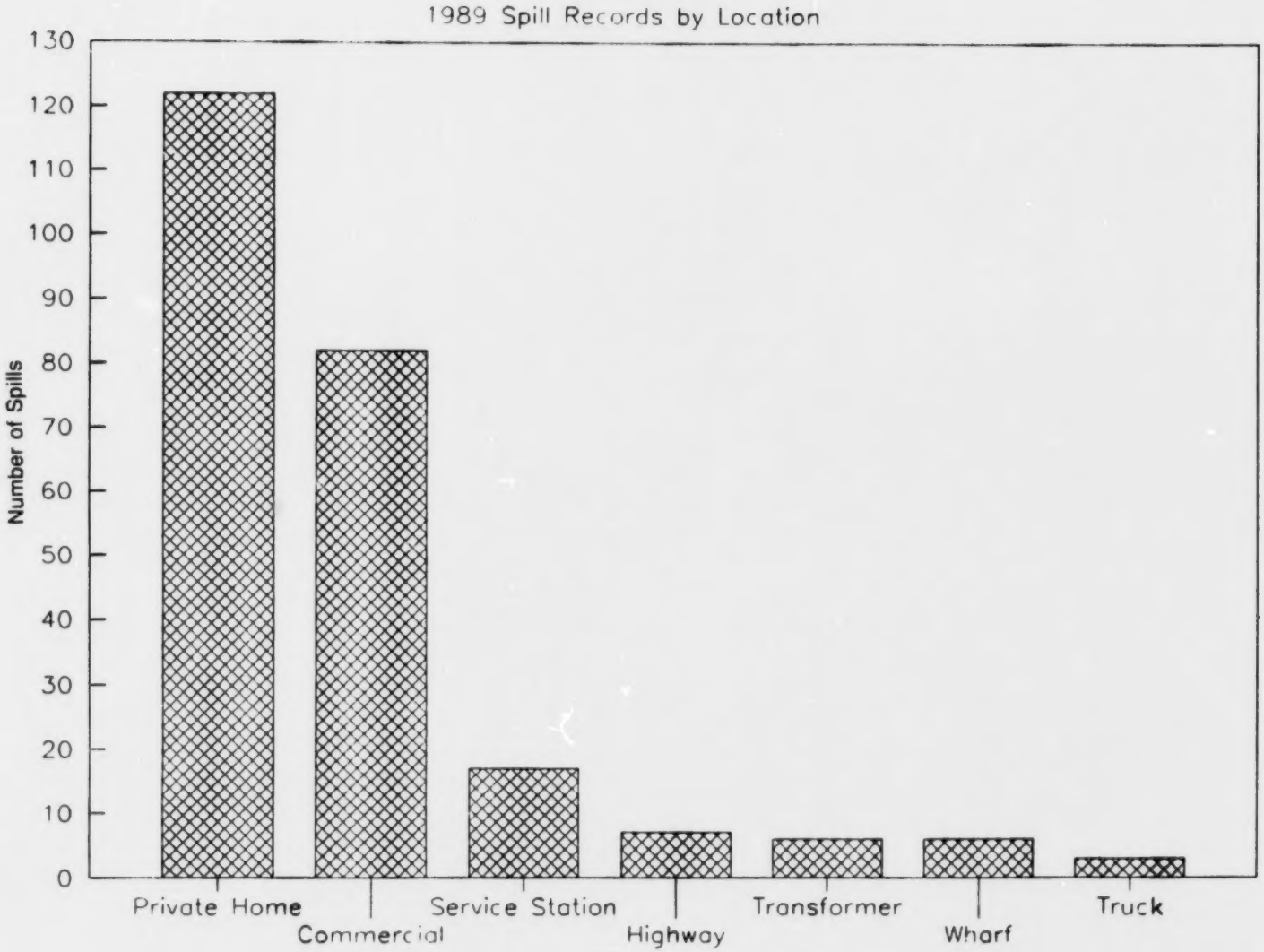
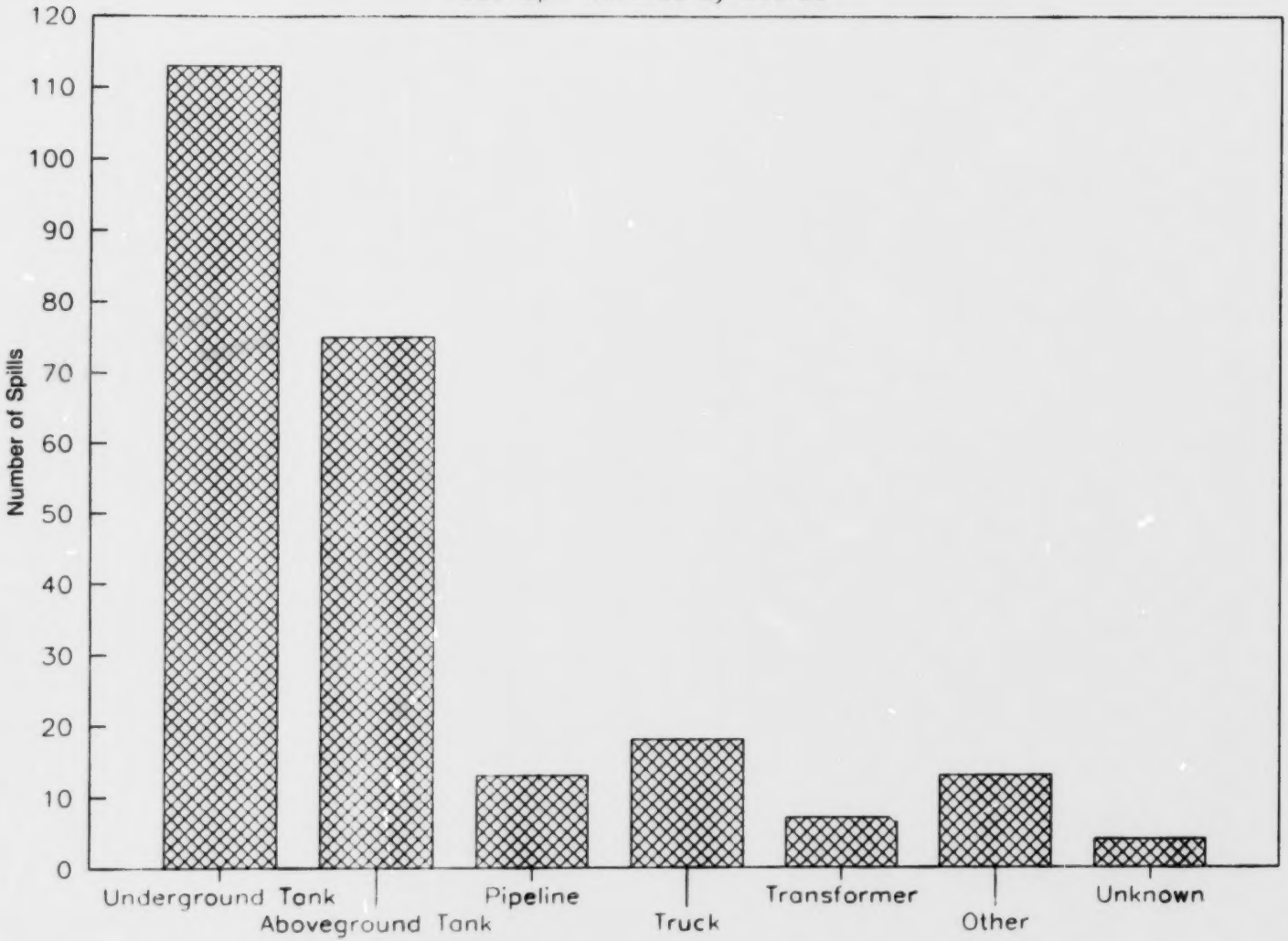

1989 Spill Records by Location
Number of Spills
130
120
110
100
90
80
70
60
50
40
30
20
10
0
Private Home
Commercial
Service Station
Highway
Transformer
Wharf
Truck

Figure 2

1989 Spill Records by Source



Marine Environment Section

Marine Water Quality Investigations:

A. West River

In August of 1987 a new wide span bridge structure became operational in the New Dominion causeway across the West River. Using water quality information generated by the Section a contract was let to P. Lane & Associates to provide the Department with a scientific assessment of the resulting improvements in the water and environmental quality of that estuary. The final report of that assessment is expected in Februrary, 1990. It is anticipated that the information obtained from this work will be beneficial in evaluating the effectiveness of similar modifications to other causeway impounded systems on P.E.I.

B. Barbara Weit River

In response to recommendations contained in a study report entitled "Barbara Weit Estuary, Pollution Alleviation Study" submitted to the Department in late 1988, a water quality monitoring program was undertaken in that system during the spring, summer and fall of 1989. The purpose of this project is to evaluate water quality changes as a result of improved waste water treatment at Northeast Energy Ltd. for the Cavendish Farms potato processing plant. The information is necessary to assess the possible impact of relocating the effluent from the headwaters of the Barbara Weit estuary to the southeast corner of Malpeque Bay. Continuation of the monitoring program for at least one more year is anticipated.

C. Hillsborough River

The Hillsborough River is one of the most productive oyster growing areas in the Province. In the winter of 1989 representatives from the Queens County Shellfish Association approached the Department about the water quality in the estuary. It is perceived by the fishermen that there has been a gradual deterioration in the quality of the water and sediments particularly during the summer months when there is some evidence of seasonal eutrophication. As a follow-up to these concerns the department initiated a comprehensive sampling program of major freshwater feeder streams as well as throughout the estuary with sampling stations extending from Hillsborough Bay to Mt. Stewart. Initial interpretation and analysis of the chemical and biological data will be carried out during the winter of 1990. It is anticipated that the sampling program will continue during the open season of 1991.

D. North River

A major eutrophic event occurred in the section of the North River upstream of the causeway during the July-August period of 1989. Investigation of conditions in the system revealed that the estuary had turned completely anoxic (stagnant) due to extremely high plant productivity and lack of natural tidal flushing brought about by the causeway impoundment. The Department of Transportation and Public Works have been advised that the only real solution to this annual problem is to modify the crossing to permit free tidal exchange.

E. Estuarine Water Quality Monitoring (Cardigan River, Boughton River, St. Peters)

With the rapid expansion of all facets of the aquaculture industry on P.E.I. the need for environmental information including the physical, chemical and biological characteristics of coastal bays and estuaries has become of foremost concern. A comprehensive monitoring program was carried out during the open seasons of 1988 and 1989 at St. Peters Bay, Boughton River and Cardigan River to obtain oceanographic information and study the limitations of different estuaries for aquaculture and the impact of aquaculture activities. This project was funded under the Estuary Section of the Canada/P.E.I. Water Management Agreement. Information has been collected in relation to physical oceanography, water chemistry and biological food supply. A final report on this project is expected by the end of March, 1990.

F. Glenfinnan - O'Keefe's Lake

Regular monitoring of Glenfinnan and O'Keefe's Lake has been ongoing for a number of years with its principle objective to evaluate the long term effect of the addition of agriculture limestone to the lake water to restore and maintain pH levels within an acceptable range. Lime was last applied to O'Keefe's Lake in the fall of 1987 and our monitoring information has indicated that further application is not yet necessary.

G. Shellfish Growing Area Surveillance Program

The Federal/Provincial Cooperative Shellfish Growing Area Surveillance Program was active on a much expanded basis during the summer and fall of 1989. Two field sampling crews and one laboratory person were employed with funds made available by Environment Canada.

A total of 2950 samples were collected from 50 different growing areas around the province. Day to day supervision, some field equipment and laboratory facilities were supplied by the Department.

Community Services Laboratory

The Community Services Laboratory operated by this Section deals primarily with the chemical and microbiological analyses of water, wastewater and food products. All microbiology and some partial chemistry work is carried out at facilities located on the 5th floor of the Sullivan Building while the water chemistry analysis is conducted at the Provincial Department of Agriculture Laboratory.

The following table provides a summary of the number of analyses carried out of each parameter or group of parameters. The table will have two headings, Community Services Laboratory and Agriculture Laboratory.

Laboratory	Type of Analysis	Number of Analyses		
Community Services Lab.				
	Water			
	- microbiology	10,529		
	- coliform, filtrations	2,497		
	- coliform, multi tube	197		
	- fecal coliform - multi tube	1	8	2
	- pseudomonis	103		
	- aerobic colony count	39		
	- staph aureus	85		
	- fecal streptococci	82		
	- misc	7		
	- fecal coliform - A-1 method	2,920		
	TOTAL	16,671		
	Water			
	- chemical indicator parameters (TDS, Fe, Chlorides, NO_3, etc)	10,033		
	Food - Microbiology			
	- coliform	266		
	- staph aureus	268		
	- pH	306		
	- bacillius cereus	20		
	- aerobic colony count	417		
	- yeast and mold	156		
	TOTAL	1,738		
	Environmental swabs	451		
	Wastewater (BOD, SS, dye Tracers)	2,385		
	Marine waters (chlorophyll, pheophytin, org./inorg. C)	3,710		

Agriculture Lab	Type of Analysis	Number of Analyses
	Water Chemistry	
	- major ions (Na, Ca, Mg, K, Cl, SO_4, T.Alk)	15,194
	- heavy metals (Cu, Pb, Zn, Cd, Ni, Cr)	12,570
	- trace metals (Mn, Fe, ext and dis)	4,606
	- nutrient parameters (total & inorg. P, NO_3-N, NH_4, Si)	7,006
	TOTAL	39,276

Both the Microbiology and Chemistry Laboratories again showed a significant increase in laboratory output over the previous years. The combined laboratory output has increased nearly 60% since 1987.

Laboratory staff participated in training courses and workshops to become familiar with up-to-date analytical procedures.

Shore Zone Sand Removal

The extraction of sand from Prince Edward Island beaches for use in the commercial manufacture of concrete showed a slight increase over last year. During the year a total of 32 permits were issued at 17 different removal locations throughout the province. The calculated quantity removed was 42,000 cubic metres as compared to 41,000 for the previous year.

A shoreline erosion study of Panmure Island commissioned by the Department of Transportation & Public Works identified the small scale removal activity near Panmure Island park as a possible factor influencing the rate of erosion. The report recommended the discontinuance of removal activity in that area. A decision on that matter will be made prior to the 1990 field season.

Watercourse Alteration Permit Program

The Marine Environment Section is responsible for the administration of Section 10 of the Environmental Protection Act. This section provides the legislative authority to protect and control any type of alteration in the province's watercourses and wetlands. Before undertaking an alteration of any kind the proponent is required to obtain a watercourse alteration permit.

During the year a total of 130 individual applications were reviewed. Of that number 100 permits were issued with operational conditions, 4 were rejected while 26 are still under review (due to the late date of application). All watercourse alteration applications are referred to the Watercourse Alteration Advisory Committee formally established by the Minister to assess such alterations.

During the year there were three successful prosecutions under this section of the Act.

Shoreline Erosion

Staff were active during the year in a number of aspects related to shoreline erosion. A number of shorefront erosion problems were investigated at the request of property owners.

A successful workshop on "Shoreline Erosion and Protection" was held in May of this year under the co-sponsorship of the Department of the Environment and the National Research Council.

Other Activities

The Marine Section is responsible for the administration of sections 22 and 23 of the Environmental Protection Act which deals with protection of sand dunes and beaches. Emphasis is directed at controlling activities such as motor vehicles on dunes and beaches, and removal and destruction of cover vegetation. There were three successful prosecutions under section 22 during the year.

Twenty-five dredge spoil disposal applications were reviewed as part of the Ocean Dumping Control review process. A number of on-site inspections of sites were carried out with Public Works Canada.

Several meetings of the Maritime Shellfish Growing Area Classification Committee were attended and several meetings of the P.E.I. Working Group on Shellfish were held during the year to deal with matters related to the surveillance and classification of shellfish growing areas.

Staff of the Section were actively involved in the Co-ordinating Committee and several Technical Advisory Committees related to the administration and supervision of projects under the Canada/P.E.I. Water Management Agreement.

Special Programs

In October, 1989 an agreement was signed with the Federal Environment Minister for a $180,000 per year Water Quality Agreement which defines a joint long-term water quality assessment program for 48 locations in nine major watersheds in the province. Groundwater, freshwater streams and estuaries will be included. Implementation is scheduled for April 1, 1990.

The federal-provincial Water Management Agreement continued in 1989, its last full year of project activities under the current agreement. Seven projects were underway in 1989 as follows:

1) Groundwater Resources Evaluation Project
2) Well Construction Pilot Project
3) Pesticide Sampling Project
4) Watershed Water Use Inventories
5) Estuary Water Quality Assessments
6) Southern Malpeque Bay Bacteriology Study
7) Water Resource Information Programs

A number of these projects are described elsewhere in this report. The Information Program produced several brochures on water resources and their protection in the province and video productions on "Water and the Economy," and "Estuaries" were produced.

The Federal-Provincial Agreement on Water Quality Surveys continued in 1989 with 9 stream gauging stations and 12 groundwater observation wells providing current and historical water quantity information across the province.

Water Resources Branch assisted the Department of Industry in developing the terms of reference for a series of studies investigating the present capacity and potential for future development of industrial water supplies and wastewater treatment facilities on Prince Edward Island. A contract was awarded in June of 1989 and Branch staff formed the core of the technical steering committee overseeing the work.

Branch staff were involved in providing information to the Royal Commission on Land, and presentations to the National Defense College and numerous professional and community groups.

FISH and WILDLIFE BRANCH

Programs and activities of the Fish and Wildlife Branch are directed at providing recreational and economic opportunity through the conservation, protection, and enhancement of the Province's wildlife and sport fish resources.

Interest and enjoyment in these renewable resources is shared by a majority of the population. In addition to the obvious importance of fish and wildlife to anglers, hunters and trappers, a 1987 survey determined that 92 percent of the Province's residents participated in one or more wildlife-related activities. The survey determined that residents spent $19.5 million on wildlife-related activities in 1987, with 79 percent taking part in wildlife-related activities on their own property.

This report summarizes projects and activities in the major program areas of the Branch.

Fisheries

Habitat:

The Fish and Wildlife Branch is responsible for the maintenance and management of approximately 90 dam sites in the Province. Inspections of these sites are carried out on a continuing basis and minor repairs were made to several sites in 1989. Major repairs were carried out at Rackham's Pond, Wheatley River and Scale's Pond, Freetown during the summer of 1989.

A new fishway and weir were constructed at Egolf's Pond, Heatherdale on the Valleyfield River. This site will be flooded to normal operating level (N.O.L.) in the spring of 1990 and will provide increased recreational opportunities in the Southern Kings area as well as insuring fish access to several kilometers of productive stream habitat.

A fishway was contructed at MacLean's Pond, Vernon River in the fall of 1989. This project is 90% complete and will be finished in early spring 1990. This fishway will provide access for anadromous fish to a large part of the Vernon River water system. Ducks Unlimited Canada provided financial and engineering assistance to both new construction projects.

A priority list for future pond development was compiled and will allow for better planning of future construction activities.

Upstream movements of fish were monitored at several fishways during the 1989 field season. The data collected provides information on the timing and size of sea-run populations, particularly Brook trout but information is also gathered on rainbow trout, Atlantic salmon, eels, gaspereau and white perch. During 1989, traps were maintained at Bell's Pond, New Glasgow; Scale's Pond, Freetown; Miller's Pond, Kelvin; Officer's Pond, Suffolk; Knox's Pond, Montague and Old Maritime Electric Pond, Valleyfield.

Several organizations and individuals were assisted in efforts to implement stream improvement projects in various watersheds throughout the Province. These included the P.E.I. Fly Fishers Federation on the West River and the Souris Branch of the Wildlife Federation on the Fortune River.

Stock Enhancement:

High quality rainbow trout fisheries were enhanced again in 1989 at O'Keefe's and Glenfinnan Lakes with the stocking of fall fingerlings from the Cardigan Salmonid Enhancement Center. Water quality in both lakes is monitored on a regular basis in cooperation with the Marine Division. Stocking levels were increased slightly at both lakes in 1989.

In addition, approximately 6,000 rainbow trout were released in borrow pits in West Prince County during October. These fish should offer excellent recreational opportunities in 1990.

During the months of May and June, approximately 16,000 yearling brook trout were stocked in 23 pond sites throughout the Province. These fish were divided by county as follows:

Prince - 5,000
Queens - 6,000
Kings - 5,000

These fish were from domestic (hatchery) stock and were stocked in ponds with high fishing pressure, providing basically a put and take fishery.

During October, 1989, 20,000 fall fingerling brook trout from wild stock were released at sixteen (16) sites across the Province. These were divided on a county basis as follows:

Prince - 6,500
Queens - 6,500
Kings - 7,000

These fish were derived from sea-run wild stock and considered to be of superior genetic stock as compared to the domestic strain.

The Fish and Wildlife Branch continued to support Fisheries and Oceans Canada's Atlantic salmon enhancement program in the Province by providing manpower to assist in the rearing of fish at Cardigan and at Profitt's Pond. The two personnel at Profitt's Pond were made available through the Department of Industry's Jobs for Youth program. In addition, two students were obtained through the same program to assist in a salmon angler survey on the Morell River and also to assist in operating the trap at Leard's Pond, Riverton. The number of salmon returning to the river in 1989 was lower than anticipated and their arrival back in the river was later than expected. This later return was attributed to the stocking of late run stock. The run should improve in 1990, both in timing and in total numbers.

The Fish and Wildlife Branch co-operated with Fisheries and Oceans Canada in an effort to determine the potential for a salt water recreational salmon fishery. Efforts to angle fish in saltwater were unsuccessful due to a lack of fish early in the year.

Sportfishing Survey:

A comprehensive socioeconomic survey of the recreational sports fishery will be carried out in 1990. This is a co-operative project with Fisheries and Oceans Canada and will be the fourth survey of its kind to be undertaken. This survey is repeated every five years and demonstrates the recreational and economic benefits of the sports fishery on Prince Edward Island.

Surface Water Inventory

An inventory of major water systems continued in 1989 under the auspices of the Canada-PEI Water Agreement with Environment Canada. The project has proceeded faster than anticipated with the result that twelve major water systems will have been completed by March, 1990. This information will be extremely valuable in the future management of our surface water resource. There have already been demands for the information compiled, reflecting the value of the end products.

All watershed reports are complete or are in the final stages of preparation for publishing. In addition, several fact sheets and brochures have been, or are nearing completion. These publications will increase public awareness of the need for integrated watershed management and will provide information specific to certain watersheds and subject areas. Several demonstration projects were undertaken under this program and serve as useful examples of program resource management.

Upland Game

Forest management continued on Fish and Wildlife managed properties in 1989 in co-operation with the P.E.I. Forestry Division. A forest technician was employed for the period April 1 to September 30 to prepare management plans for forested lands under the Branch's management. These plans are designed to improve wildlife production and offer increased recreational opportunities, while recognizing the forestry resource needs.

Forestry management initiatives in 1989 included several small mixed plantations, interplanting, boundary line establishment and the planting of a demonstration hedgerow in the Forest Hill Wildlife Management Area.

The co-operative pheasant rearing and release program with the P.E.I. 4-H Council was continued in 1989 with twelve groups of 2-3 4-H members from various areas of the Province participating. Each group was given 24 chicks along with the necessary feed and information to rear chicks to release age. The following 4-H clubs were involved with this program in 1989: Morell, Albany, Dunstaffnage-Marshfield, Tyne Valley, Winsloe-Brackley, Ft. Augustus, Brooklyn-Heatherdale, Chepstow-Little Harbour, and Eastern Clovers (Black Pond area). As in past years, the Earnscliffe Shooting Preserve was provided with technical and financial assistance for its pheasant rearing and release operations. The preserve offers residents and non-residents the opportunity to pursue pheasants under natural field conditions.

The sharptail grouse introduction project was continued in 1989 and efforts to monitor its success were increased. Four additional birds were obtained from Manitoba and released in the northeastern area of Kings County. An individual from the Souris area was retained to monitor the status of released birds and to attempt to locate breeding birds. Several positive sightings were confirmed in the Big Pond area and more intensive surveys are planned in 1990. A relatively large concentration of approximately sixteen birds was located in early winter in the Greenwich area of Kings County. This is particularly encouraging and may indicate that the birds have successfully reproduced in P.E.I. This sighting indicates that birds have moved approximately fifteen miles from the release site. This area will be checked carefully in 1990.

Winter counts of gray (Hungarian) partridge are done on an annual basis, when snow conditions permit, to assess overwinter survival and to provide an index of population size. Sightings in December, 1989, indicate that transfers of coveys to the Souris area several winters ago were successful with a well established population resulting.

Co-operative Watershed Management Project

In 1986 Wildlife Habitat Canada together with a variety of government agencies and community organizations launched an intensive 5 - year campaign to enhance, protect and preserve fish and wildlife habitats in the Montague Watershed. The project was designed to demonstrate to landowners and land resource agencies the multiple benefits of co-operative land use management. As the root of the project is the understanding that man's use of the land, whether for agriculture, forestry or highways can affect wildlife habitat and therefore the kinds and numbers of animals occupying these habitats.

The problems on the Montague watershed are typical of those found throughout the Island. Long time forest hygrading, coupled with spruce budworm infestation and a general lack of good forest management have combined to reduce the quality of forested wildlife habitats. Similarly, streams have been choked by woody debris and sediment eroded from roadsides and agricultural lands, adversely affecting sportfish and shellfish stocks.

To rectify the situation, various management activities have been promoted in cooperation with private landowners. These include hedgerow establishment and rejuvenation, stream improvement riparian zone enhancement, forest management, highway and agricultural erosion control.

In 1989 the project supported 38 part-time and 3 full-time employees hired through funds offered by Wildlife Habitat Canada, Canada Employment and Immigration Commission, National Research Council, Fisheries and Oceans Canada, Environment Canada, P.E.I. Conservation Strategy and the P.E.I. Department of Industry. In total the project has employed 120 individuals and raised almost $1,000,000 in addition to the $460,000 provided by Wildlife Habitat Canada. A number of milestones were reached this year including the establishment of 30 kilometers of new hedgerows, completion of stream improvement over the entire length of the Montague River, stocking 9,000 juvenile salmon in the Valleyfield River, managing 3,000 hectares of privately owned woodland and constructing roadside check dams at all stream crossings. (The status of this project with respect to established management goals is conveniently summarized in the accompanying table).

An on-going program of inventory, monitoring and evalution will shed light on the relative value of management activities to improve wildlife habitat in the watershed.

As the final year of the program approaches, project staff will attempt to record and distribute any information useful to other groups or organizations sharing similar wildlife enhancement objectives. In addition, an objective for 1990 will be the establishment of a committee of concerned area landowners to address the long term operation of the project in consultation with the project's steering committee.

1989 was a very successful year, both in terms of the amount of work accomplished and the positive feedback from landowners, government and the sponsor Wildlife Habitat Canada.

SUMMARY I

Current Status of the Management Objectives; Activities and Goals for the Co-operative Watershed Management Project. Interim Reporting Period 01 April 1989 - 30 September 1989.

Habitat Component	Management Objective	Annual Goal	Project Goal (5 Years)	Amount Completed April 1 - Sept. 30/89	Accumulative Project Totals to Sept. 30/89
Hedgerow	Established	10 km	38.5 km	10.93 km	30.88 km
	Rejuvenated	30 km	90 km	15.45 km	15.45 km
Stream Improvement	Stream cleaning	5 km	25 km	6.1 km	26.4 km
	Habitat Improvement	Log deflectors	as required	7 km	15 km
		Weirs	as required	0 (Montague)	1
			as required	0 (Valleyfield)	1
		Baffles	as required	4	6
		Gabion deflectors	as required	16	28
		Braided channel diversions	as required	2	7
		Pool diggers	as required	0	6 (Valleyfield R.)
	Instream Catchment basins	5	as required	4	5
Riparian Zone Management	Tree Salvage	5 km	25 km	1.0 km	11.7 km
	Reforestation	5,000 HWD	25,000	805	2,305
		5,000 SWD	25,000	2,349	13,196
		1,000 Aspen Cuttings (Beaver Management)			
	Bank Stabilization	Highway grass mix	25 km	13.72 km	34.02 km
		Reed canary grass	25 km	13.72	34.02 km
Agriculture	Soil and Water Conservation Projects	Diversion terracing	as required	1	2
		Outlet stabilization	as required	1	1
		Grass waterway	as required	1	1
Forest Management	Harvesting	Softwood 60 ha	300 ha	25 ha	177.3 ha
		Hardwood 5 ha	25 ha	0.5 ha	4.9 ha
		Mixed 15 ha	75 ha	3.24 ha	20.44 ha
	Stand Improvement	Hardwood 20 ha	125 ha	6.62 ha	15.38 ha
	(thinning, strip & patch cuts)	Softwood 10 ha	75 ha	10 ha	18.8 ha
	Road Construction	as required	as required	4 km	11.9 km
	Bridge Construction	as required	as required	1	2
	Plantation Maintenance	Manual	100 ha	10 ha	30.7 ha
		Chemical	as required	3 ha	3 ha
	Site Preparation	as required	as required	20 ha	100.5 ha
	Reforestation	as required	as required	37 ha	73.9 ha
	Culvert Installation	as required	as required	9	11
	Boundary Line Established	as required	as required	2.5 km	11.4 km
Highway Improvements	Erosion Controls	Roadside sediment traps	as required	7	20
		Diversion Channel	as required	1	3
		Hydroseeding	as required	4 km	8 km

Migratory Birds

Habitat:

The Waterfowl Habitat Management Program consists of the development and enhancement of wetlands for both wildlife habitat and public use. For the past 19 years, Ducks Unlimited Canada, in co-operation with the Fish and Wildlife Branch and private landowners, has developed and improved 94 marshes on Prince Edward Island, totalling 6,917 acres and including 172.4 miles of shoreline. During the 1989 year, 3 projects totalling 1,105 acres and 5.1 miles of shoreline were developed.

The Branch continued to sow wild rice seed on newly flooded impoundments and assessment of previous plantings continued. The program to provide wood duck box plans and information to groups and individuals continued in 1989. The Branch also erected new boxes and maintained and replaced old ones in a number of wetlands during the year.

Eastern Habitat Joint Venture:

To fulfill the habitat mandate under the North American Waterfowl Management Plan the Eastern Habitat Joint Venture was initiated with first step projects in 1988. During 1989 a 1,200 acre parcel of land was purchased in the Big Brook area in eastern Kings Country, consolidating an 1800 acre block of wildlife habitat. A management plan is currently being developed jointly by the Fish and Wildlife Branch, the Canadian Wildlife Service and Ducks Unlimited Canada with the assistance and cooperation of the Souris and Area Branch of the P.E.I. Wildlife Federation.

During the year the Eastern Habitat Joint Venture Five Year Plan for P.E.I. was developed. The Five Year Plan identifies expenditures in P.E.I. exceeding 2.7 million dollars, securing, enhancing and protecting wetland habitat over the next five years.

Surveys/Banding:

The waterfowl breeding pair and brood survey was conducted again in 1989. The survey provides an annual index of waterfowl production for wetlands across the Province and aids in regulatory management decisions. The survey is conducted co-operatively with the Canadian Wildlife Service, with the Service providing supplementary field crews and data analysis services. An analysis of data collected over the past 6 years indicated the need for regulatory changes designed to enhance the survival of locally produced black ducks. In response, the opening of the hunting season for black ducks was delayed two weeks in 1989. Extremely cold November weather and early freeze-up necessitated closing the duck season one week earlier than normal.

Open water around the bays, estuaries, and rivers of P.E.I. provides winter habitat for waterfowl. Post hunting season surveys are conducted in January by states and provinces in the Atlantic flyway to determine the status of waterfowl populations. In mid-January 1989, 3400 black ducks, 1700 goldeneye and 1800 mergansers as well as a number of old-squaw, mallards, Canada geese and scoters were observed during the mid-winter waterfowl inventory flight.

The Branch co-operates with the Canadian Wildlife Service and the Atlantic Waterfowl Council in banding waterfowl to determine migration routes, harvest patterns and mortality rates for ducks and geese. Branch staff were involved in banding waterfowl that overwinter in the Province. The results of this winter banding are summarized below.

Summary of Winter Banding
Prince Edward Island
1989

Species	Male	Female	Unkown	Total
Black Duck	323	152	—	475
Mallard	4	4	—	8
Black X Mallard Hybrid	4	—	—	4

Period of banding: 01-24-89 — 03-08-89

Efforts were also directed at banding locally produced ducks. A total of 113 black ducks, 414 blue-winged teal, 60 green-winged teal, 17 wood ducks, 9 pintails, and 1 mallard were banded during July and August with the assistance of the Canadian Wildlife Service

The Canada goose banding program continued during 1989 at the Orwell Cove Wildlife Management Area in co-operation with the Canadian Wildlife Service. A total of 15 geese were banded and neck collared to determine migration patterns and local movement.

The banding program also includes activities related to migratory birds other than waterfowl. Twelve young ospreys were banded in a continuing effort to gain information on migration patterns and mortality factors for young fledged from Island nest sites. This brings the total number banded over the years to 320. In addition, 8 bald eagles were banded in 1989.

The breeding census of the woodcock, an important game bird species in eastern North America, is conducted annually throughout its range. Results of Prince Edward Island's survey indicate a decline in the breeding index of 18% in 1989. This conforms to the general pattern in the Maritime Region.

Surveys of all cormorant colonies were conducted in 1989 in a continuing effort to monitor changes in the status of both species to determine future management needs.

Lead Shot Survey

A study to determine the quantity of lead shot deposited in wetlands in the Province and to assess the effect on waterfowl commenced in 1988 and continues through 1990. Sediment sampling in two heavily hunted wetlands, collection of blood samples from both overwinter waterfowl and locally produced birds, and gizzards from hunter harvested birds were conducted during 1989.

The study is being done by a M Sc. candidate at Acadia University and is being supported by the Fish and Wildlife Branch and the Canadian Wildlife Service. Results and recommendations will be contained in a final report due in the spring of 1990.

Wetlands Protection and Enhancement Program

The Wetlands Protection and Enhancement Program is a co-operative wetlands conservation program designed to identify and conserve waterfowl migration and wintering habitats, and to enhance freshwater marshes for waterfowl production. It addresses the loss and degradation of wetlands as part of a continental waterfowl recovery plan, and meets the more specific goals of the Eastern Habitat Joint Venture under the North American Waterfowl Management Plan. This five year program, which began in 1987, is jointly sponsored by Wildlife Habitat Canada, Ducks Unlimited Canada, and the Canadian Wildlife Service with core funding being provided by Wildlife Habitat Canada.

Efforts to identify and enhance wetlands continued in 1989. Surveys of 41 waterfowl wintering habitats were carried out and the most important natural and artificially created sites were identified. An April aerial survey of migrant waterfowl, with information previously collected, was used to compile a map/data file on 49 important migration habitats. Special surveys of brant were also conducted in the spring, with the most important habitats for these birds identified. Strategies for the conservation of some migration and wintering habitats have been discussed with landowners and municipalities, with the establishment of greenbelts being planned for several sites.

Thirty-six freshwater wetlands across Prince Edward Island were evaluated, and enhancement efforts recommended. As well, implementation of enhancement plans previously suggested for 41 Kings County wetlands was begun with the co-operation of the Charlottetown Ducks Unlimited Committee. Marsh vegetation transplants and cattail control were carried out in eight wetlands, and a shelterbelt was planted at North Lake impoundment. Seventy-eight wood ducks nest boxes were installed in Kings County impoundments, and a corps of volunteers solicited to maintain the boxes. Wild rice for waterfowl brood cover was planted in several Queens and Prince County marshes and salt water was released from a freshwater impoundment in Covehead. More wetlands enhancement activities are planned in 1990, and 28 additional Queens and Prince County wetlands will be evaluated.

The Wetlands Protection and Enhancement Program continues to contribute to the Eastern Habitat Joint Venture with the drafting and implementation of the Grove Pine/Big Brook Management Plan in 1989.

Furbearers

Branch staff continued to monitor, develop and improve the wild fur industry in the Province through trapper education, research and management. Total value of wild fur exported from the Province for the 1988-89 season again decreased sharply due mainly to the continual reduction in fur prices. The following tables summarize the annual harvest from 1979 - 1989 and the average price and value of fur harvested by species for the past two seasons with deviations from the 10-year average noted.

1989 was the third year for mandatory education for all first-time trappers. One course for all of P.E.I. was conducted in October, with a total of 17 new trappers receiving certification. Courses are conducted jointly by the P.E.I. Trappers Association and the Fish and Wildlife Branch.

Although valuable for fur and, more importantly, for creating wetland habitat, beaver populations must be properly managed to prevent over population and subsequent damage to roads, woodlots and agricultural land. Information on sex, age and reproduction is collected annually for beavers harvested and used in conjunction with population indices and harvest figures to determine annual trapping season.

During the year, Fish and Wildlife personnel continued to co-operate with Department of Transportation and Public Works staff in the control of beavers at highway-stream intersections throughout the Province. In this regard, 1989 was a busy year.

P.E.I. Wild Furs Exported and Total Value by Species, 1979 through 1989

Species Value	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89
Beaver	390	327	700	289	378	476	485	538	538	397
(value)	(19,399)	(10,284)	(13,454)	(5,699)	(7,311)	(14,580)	(21,272)	(28,611)	(17,490)	(14,749)
Muskrat	5,788	7,661	7,563	8,527	9,886	8,964	7,269	6,083	5,712	7,101
(value)	(53,192)	(70,864)	(47,496)	(35,302)	(57,339)	(51,274)	(31,547)	(38,992)	(35,072)	(24,569)
Red Fox	944	791	965	995	994	1,140	892	939	722	752
(value)	(90,964)	(78,127)	(77,538)	(68,794)	(79,013)	(69,962)	(46,268)	(62,753)	(30,093)	(19,529)
Silver Fox	38	37	26	49	46	27	30	34	33	42
(value)	(6,486)	(7,194)	(4,052)	(6,891)	(6,785)	(4,730)	(3,351)	(4,766)	(3,955)	(2,954)
Cross Fox	119	91	119	119	85	85	46	61	34	59
(value)	(17,871)	(10,474)	(14,801)	(15,278)	(10,614)	(11,367)	(3,391)	(5,859)	(2,313)	(2,609)
Raccoon	2,001	1,730	2,024	1,336	1,119	1,405	1,284	1,473	1,510	403
(value)	(58,329)	(43,527)	(46,754)	(20,788)	(16,673)	(27,187)	(25,192)	(31,611)	(16,535)	(1,576)
Mink	805	944	909	635	718	1,147	866	865	809	573
(value)	(17,042)	22,788	20,507	(11,297)	(17,620)	(31,370)	(21,355)	(33,242)	(29,529)	(18,623)
Red Squirrel	94	62	106	63	210	84	57	74	32	41
(value)	(83)	(54)	(60)	(47)	(74)	(34)	(12)	(21)	(18)	(4)
Weasel	12	29	76	10	15	45	24	36	26	12
(value)	(10)	(12)	(71)	(11)	(24)	(79)	(27)	(51)	(11)	(8)
Skunk	26	7	17	—	—	—	—	—	2	1
(value)	(53)	(19)	(44)	(—)	(—)	(—)	(—)	(—)	(4)	(3)
Coyote	—	—	—	—	1	—	1	—	1	2
(value)	(—)	(—)	(—)	(—)	(35)	(—)	(30)	(—)	(35)	(50)
Total vaule *	$263,429	$243,343	$224,777	$164,107	$195,453	$210,583	$153,212	$202,227	$135,456	$85,574

* Includes castoreum value.

Firearm Safety Program

In 1989, sixteen firearm safety courses were held. Six of these were prehunting season courses, three were conducted in community schools and six in the high school curriculum, while one course was given to a group of air cadets. Four hundred and two individuals enrolled in these courses with 375 successfully completing the course. One bowhunter course was conducted with eleven people graduating.

In 1989, there was one recorded non-fatal hunting accident.

The efforts of volunteer instructors were acknowledged with the presentation of service pins and certificates to 18 instructors.

Licensing

Approximately 20,000 angling, hunting and trapping licenses are purchased annually. This figure does not represent the true participation of anglers and hunters due to a license exemption afforded resident commercial fishermen and their spouses, resident farmers and farm labourers and their spouses, and individuals under sixteen years of age. The number of licenses sold on a yearly basis is presented in the accompanying table.

In 1989, Federal Migratory Bird Hunting Permits were available to hunters through the Branch's hunting license vendors. Previously, these permits were available only through postal outlets in the Province. This new system has proven to be more convenient for the hunting public, as well as a benefit to license vendors. Vendors issued 2,196 of the approximately 5,500 permits issued in the Province in 1989.

1988 - 1989 P.E.I. Fur Harvest, Comparison with Previous Year and With 10 Year Average

	1988 - 1989			1978 - 1988			10 Year Average 78-79 thru 87-88			Harvest '88-'89 from '87-'88 %	Harvest '88-'89 from 10 year Average %
	Number	Value	Average	Number	Value	Average	Number	Value	Average		
Beaver	397	14,749	37.15	538	17,490	32.51	422.3	14,544	34.44	– 26	– 6
Muskrat	7,101	24,569	3.46	5,712	35,072	6.14	7,609.9	45,071	5.92	+ 24	– 7
Red Fox	752	19,529	25.97	722	30,093	41.68	913.6	68,300	74.76	+ 4	– 18
Silver Fox	42	2,954	70.34	33	3,955	119.48	36.1	5,304	146.93	+ 27	+ 16
Cross Fox	59	2,609	44.22	34	2,343	68.90	88.0	10,742	122.07	+ 74	– 33
(Total Fox)	(853)	(25,092)	(29.42)	(789)	(36,391)	(46.12)	(1,037.7)	(84,346)	(81.28)	+ 8	– 18
Raccoon	403	1,576	3.91	1,510	16,535	10.95	1,418.4	32,161	22.67	– 73	– 72
Mink	573	18,623	32.50	809	29,529	36.50	837.3	21,645	25.85	– 29	– 32
Red Squirrel	41	4	.10	32	18	.56	85.4	45	.53	+ 28	– 52
Weasel	12	8	.66	26	11	.42	35.5	40	1.13	– 54	– 66
Skunk	1	3	3.00	2	4	2.00	5.6	13	2.32	– 50	– 82
Coyote	2	50	25.00	1	35	35.00	.5	15	30.00	+100	+300
TOTAL VALUE		$ 85,574			$135,456			$197,960		– 37%	– 57%

Prince Edward Island — Canada
Statistics
Angling, Hunting and Trapping Licenses

Season	Resident Angling	Non Res. Angling	Courtesy Res. Ang.	Salmon	Resident Hunting	Non Res. Hunting	Resident Trapping	Junior Trapping	Total Sold	Revenue
1984	11,103 ($5)	1,372 ($12)	1,648 (N/C)	68 ($5)	4,846 ($6)	555 ($25)	454 ($ 7)	66 ($3)	20,112	$118,646
1985	10,740 ($5)	1,341 ($12)	1,649 (N/C)	117 ($5)	4,477 ($6)	575 ($25)	361 ($ 7)	99 ($3)	19,359	114,438
1986	10,619 ($5)	1,547 ($12)	1,642 (N/C)	279 ($5)	4,354 ($6)	696 ($25)	365 ($ 7)	85 ($3)	19,587	119,388
1987	9,674 ($7)	1,272 ($15)	1,638 (N/C)	461 ($7)	4,000 ($7)	908 ($35)	342 ($10)	48 ($5)	18,343	153,465
1988	9,177 ($7)	1,410 ($15)	1,667 (N/C)	719 ($7)	3,832 ($7)	1,082 ($35)	253 ($10)	26 ($5)	18,166	157,776
1989	FIGURES FOR 1989 HAVE NOT BEEN FULLY COMPILED AT TIME OF PRINTING.									

Violation Summary for the Period 1985 - 1989 Inclusive

Enforcement in 1989 resulted in 106 violations being registered by enforcement staff under the various acts regulating conservation and protection of fish and wildlife in the Province. A summary of violations for the past 5 years is presented below.

VIOLATION	1985	1986	1987	1988	1989
Fishing without a license	6	12	21	11	16
Fishing while suspended	2	-	1	-	-
Fishing out of season	9	4	1	-	10
Fishing with more than one line	4	2	3	1	-
Fishing in fishway	-	-	-	-	6
Untagged Salmon	-	-	-	1	2
Spearing Salmon	-	-	-	-	1
Jigging for sports fish	-	1	4	-	2
Illegal net	-	-	-	-	1
Hunting without a Provincial License	-	-	2	3	6
Hunting out of season	-	3	3	2	5
Hunting without a Federal permit	-	1	5	2	10
Hunting while suspended	-	1	-	3	-
No firearm safety certificate	2	2	5	1	5
Transferring of license	1	-	-	-	-
Hunting on Sunday	1	1	-	-	-
Hunting in Wildlife Management Area	-	4	1	1	1
Loaded firearm in vehicle	2	6	1	1	2
Exceeding daily bag limit	1	4	3	1	5
Baiting of waterfowl	1	7	4	9	5
Hunting with more than one shotgun	-	1	-	-	-
Hunting with unplugged shotgun	3	3	2	1	-
Illegal possession of migratory birds	1	-	-	-	-
Illegal possession of protected species	-	-	-	-	1
Illegal transport of migratory birds	-	-	-	-	1
Selling game birds	-	-	-	-	1
Trapping without a license	-	-	1	-	-
Traps out after close of season	-	-	-	1	-
No fur dealers license	-	2	-	-	-
Trapping out of season	2	2	1	-	1
No tags on snares and traps	1	1	3	-	0
Illegal trap set	-	-	-	-	1
Trapping within 10 ft. of a beaver house	-	-	2	-	-
Trapping within a Provincial Park	-	1	-	-	-
Failing to exhibit beaver carcass	-	1	-	-	-
No permit for green hides	2	1	-	2	-
Shipping fur with export permit	1	1	-	-	-
Trespassing	-	1	-	2	3
Giving false information	-	4	5	3	5
Obstructing Conservation Officer	1	-	1	1	-
Assault Peace Officer	4	-	-	1	-
Pesticides too close to a stream	2	1	-	7	2

Motor vehicle on sand dune	-	-	-	1	4
Littering	-	2	-	-	4
Illegal excavation pit	2	2	2	-	-
Sand dune alteration	2	2	2	-	1
No stream alteration permit	-	-	1	-	2
Off highway vehicle on highway	-	-	-	1	-
Off highway vehicle not registered	-	-	-	2	1
Carrying restricted weapon	-	-	-	1	-
Possession of narcotics	-	-	-	1	1
Illegal possession of liquor	-	-	-	-	1
TOTALS	48	71	71	60	106

EMERGENCY MEASURES ORGANIZATION

The Emergency Measures Organization is responsible for the development and co-ordination of an overall provincial program of preparedness for and response to emergencies and disasters.

The Branch provides planning, training and advisory services for both provincial and local government authories and industry. It actively participates when an emergency or disaster situation develops beyond the capacity of the local government, and administers special assistance programs authorized by the Government of Prince Edward Island following emergencies and disasters.

Division staff are specially qualified and experienced in preparing plans and procedures, co-ordinating resources and providing advice on problems of emergency evacuation, welfare, health and rehabilitation. Specialists from other government departments provide resource advice and assistance when required.

Joint Emergency Preparedness Program (JEPP)

Funded nationally at approximately $6.5 million annually, the Joint Emergency Prepardness Program (JEPP) represents 38% of EPC's annual budget and allows the Government of Canada, in consultation and co-operation with Provincial and Territorial Governments, to contribute to provincial and municipal projects that enhance the national capacity to respond to emergencies.

Projects submitted by the provincial and territorial response organizations are evaluated by EPC Regional Directors and senior managers according to established criteria. The financial contribution of the Federal Government is negotiated separately for each project approved and the funds are made available once the agreed conditions are met.

As in the past, activities favored the development and evaluation of emergency plans and training programs, and the purchase of communications and response equipment.

Through the assistance of JEPP, Emergency Measures Organization promoted the following projects in the past year:

JEPP # 9

Basic Ongoing Prince Edward Island Emergency Measures Organization (Peace & War) 5 Year Agreement and Readiness Plan $ 106,741

JEPP #11

Specialized Emergency Training for Fire Services Personnel to be completed in March 1990. $ 104,700

JEPP #12

Integrated Mobile Radio Trunking System. Cost Shared between Federal/ Provincial Governments & Island Tel. $3,480.000

JEPP #13

Public Protection, Continuity of Government Management of Plans Wartime Arrangements. Cost Shared between the Federal/Provincial Governments. $ 33,000

JEPP #15

Upgrading of P.E.I. Community/ Provincial Shelter Plan, Continuity of Government Program. Cost Shared between the Federal/ Provincial Governments. $ 62,861

JEPP #18

Charlottetown Mutual Aid Response Vehicle. A Cost Shared Agreement between the Federal Government and the Municipality. $ 62,408

JEPP #19

Emergency Generator Three Oaks Reception Centre. Cost Shared between the Federal Government and Unit 2 School Board. $ 44,000

JEPP #22

New Glasgow Mutual Aid Emergency Response Vehicle. Cost Shared between the Federal Government and the New Glasgow Mutual Aid Area. $ 73,870

JEPP #23

Montague District Mutual Aid Emergency Equipment. Cost Shared between the Federal Government and the Montague District Mutual Aid Area. $ 33,808

TOTAL $4,001,388

Emergency Response Vehicles

The Mutual Aid Area of Charlottetown, North River, Parkdale, Sherwood and Crossroads have received a new Emergency Response Vehicle equipped with life saving and specialized equipment to respond to chemical/hazardous goods incidents.

The New Glasgow Mutual Aid Area has received a new Emergency Response Vehicle equipped with the same type of equipment.

The Montague Mutual Aid Area received specialized equipment to enable them to respond to chemical or hazardous goods incidents.

Emergency Response Vehicles and equipment such as this, are spearheaded by Emergency Measures Organization in co-operation with the Municipality/Fire Department. Funding is provided under terms of the Federal Governments Joint Emergency Preparedness Program (JEPP) and the Provincial Government.

Emergency Generator

With financial assistance from the Federal Joint Emergency Preparedness Program (JEPP) the Emergency Measures Organization assisted in having an Emergency Generator installed in the Three Oaks Senior High School. This school is designated as the prime evacuation centre for Regional Area Two in time of emergency or disaster.

Exercises

Over the past year, several exercises have been held across the province to test the operational procedures of all Emergency Response Agencies that would normally respond to an emergency or disaster and at the same time exercise the internal emergency plans of the local hospitals.

This year we have expanded our exercises into the municipal level. There have been municipal emergency plans developed for the municipalities of Cornwall and Crapaud with two table top training exercises held in each municipality to provide training for key personnel that staff the plan.

Once again we received excellent response and co-operation from our volunteers that staff our Provincial Emergency Plan. We've held two table top training exercises in each of the five areas across the province. The exercises held included:

- Exercise Highroad XV School Bus, Tyne Valley Area
- Exercise Highroad XVI School Bus, East Wiltshire Area
- Exercise Highroad XVII School Bus, Souris Area
- Transportation of Dangerous Goods, Wellington Area
- Transportation of Dangerous Goods, Crapaud Area
- Transportation of Dangerous Goods, Vernon River Area
- Transportation of Dangerous Goods, Mount Stewart Area
- 10 Regional Table Top Exercises (Re Provincial Emergency Plan)
- 2 Municipal Table Top Exercises in Cornwall
- 2 Municipal Table Top Exercises in Crapaud

Training

Approximately 84 emergency response personnel and EMO volunteers received formal training at the Canadian Emergency Preparedness College, Arnprior, Ont. during the past year. Some of the major courses offered at the college include the following:

- Plans and Operations Peace Course
- Mayors and Elected Municipal Officials Course
- Exercise Design
- Emergency Operations Course
- Emergency Site Management
- Emergency Communications
- Emergency Public Information

There are also more specialized seminars and workshops offered at the college throughout the year.

With dangerous chemicals and hazardous substances being transported across our province's highways each year, we realize that more training has to be given to emergency response agencies and the public to assist them in dealing with an emergency or disaster of this nature.

EMO is offering a Transportation of Dangerous Goods Course. Over the past year we have held five courses of this nature with seventy-eight individuals attending from within government and from various emergency response agencies.

Canadian Boy Scout Jamboree "89"

The P.E.I. Emergency Measures Organization was involved with preparing the Emergency Manual for CJ "89" and were a part of the Jamboree Disaster Committee.

The organization took an active part with the Jamboree by having a staff member on site for the period of time the Jamboree was in operation.

The Jamboree was a glowing success and we were proud to be a part of it.

Federal/Provincial Conference Of Senior Officials on Emergency Preparedness

Prince Edward Island hosted a National Conference of Ministers and Senior Officials on Emergency Preparedness. This event took place in June 1989 with one hundred and fourteen in attendance from across Canada.

Committee Of Atlantic Emergency Measures Organization Directors

A committee of Atlantic EMO Directors was formed and scheduled to meet quarterly to discuss items of mutual and common interest in the Maritime region.

Marine Spill Emergency Response Plan

Work is under way to prepare an emergency plan for the province that will integrate with a regional emergency plan to deal with such a disaster, as a marine oil spill in the waters off this province.

Emergency Operations Centres (EOC)

During the past year, new Emergency Operations Centres were procured in the Souris, Montague and Summerside areas. These centres are in the process of being equipped with the new Provincial Integrated Communications System Radios, and other furnishings as necessary.

Emergency Plans

The Departmental Emergency Plans have been finalized for seven provincial departments with the remaining plans expected to be completed in the near future.

National Emergency Agencies (NEA)

The Provincial component of three of the eleven National Emergency Agency Plans have been addressed and are nearing completion.

Medical Emergency Response Team (MERT)

An informal agreement was reached with the St. John Ambulance to form a Medical Emergency Response Team to perform triage and life saving first aid at mass casualty incidents.

Emergency Transportation Team (ETT)

Plans are underway for the formation of an Emergency Transportation Team comprised of snowmobiles, four wheel drives and All Terrain Vehicle owners. The purpose of this team is, "to provide essential transportation services to residents in the event of a major storm where no other means of transportation is feasible".